OCTOBER 1957

PRINTING EQUIPMENT *Engineer*

Sea of Books at Doubleday & Company (SEE PAGE 5)

Importance of Research to Industry

Hand Makeready Indicted in Survey Report

Light, Optics, Images and the Printer

THE PRINTING PRODUCTION MAGAZINE

FREE ENTERPRISE . . .

Invites Competition

Star Parts believes that competition is the life of trade and, for 33 years, has brought many benefits to composing rooms through competition, research and improved mechanical operation of line-casting equipment.

If there were only *one source* from which line-casting machine parts could be obtained, it seems logical to believe that high prices could be set, and standards of service established to suit the convenience and desire of the only supplier.

STAR PARTS provides these competitive advantages to composing rooms:

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- Improved service—shipping needed parts and supplies the same day the order is received.
- Continuing study of customer requirements—resulting in more efficient design and better manufacturing techniques.

Buy STAR Parts . . . *reap the benefits of continued development of mechanical improvements, same-day service and strictly competitive prices.*

Precision TRADE ★ MARK Parts

STAR PARTS, Inc.
SOUTH HACKENSACK, N. J.

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For More Information Circle 167 on Reader Service Card

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STA-HI TWIN-PLATE ROUTER

This all-new time and money saving equipment not only routes two identical stereotype color plates in one operation . . . it has all the features listed below (and more) to assure economy, speed, safety and precision in this vital operation in newspaper color production:

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- **AUTOMATIC LUBRICATION SYSTEM**
- **MICROMETER HANDWHEEL FOR SETTING DEPTH OF ROUTING CUT**
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- **RUNNING-TIME METER TO SCHEDULE PROPER PREVENTIVE MAINTENANCE**

STA-HI CORPORATION . . . 235 West Washington Boulevard • Whittier, California

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The CARE & FEEDING of high-speed presses *with reels, tensions and pasters by*

SCOTT

- **Peak production of today's newspapers, regardless of the number of press units involved, depends on an uninterrupted supply of paper, fed smoothly into the webs at running speed of the presses. That's where SCOTT reels, tensions and pasters demonstrate their efficiency!**
- **Simplicity of design, ease of adjustment and minimum maintenance have put them in the "preferred" class because of their dependability. SCOTT reelroom equipment, for any size press installation, will meet today's requirements in every way.**

Typical Reelroom equipped with SCOTT Reels, Tensions & Pasters

SEND FOR LITERATURE

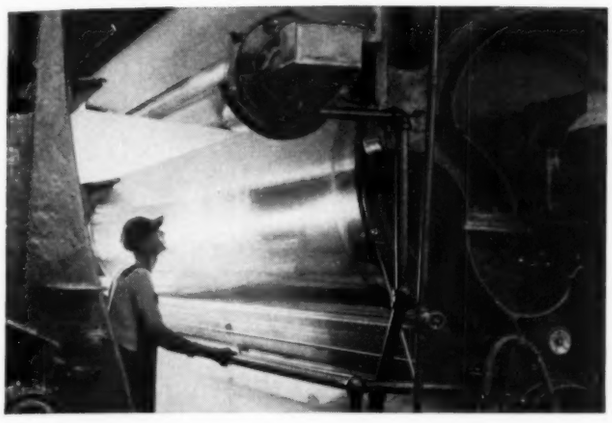
WALTER SCOTT & CO.

DIVISION OF **WOOD NEWSPAPER MACHINERY CORPORATION** Plant: Plainfield, N. J.

EXECUTIVE & SALES OFFICE: 501 FIFTH AVENUE, NEW YORK 17, NEW YORK

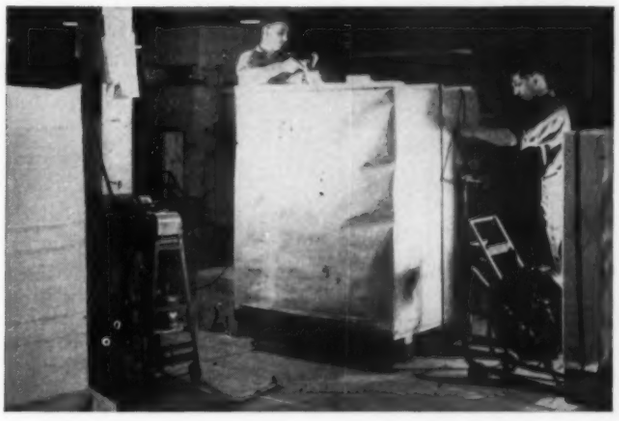
For More Information Circle 156 on Reader Service Card

MEAD PAPERS RUN EASILY BECAUSE THEY LIE FLAT



1. IT STARTS WITH MANUFACTURING

Paper doesn't just naturally lie flat. It has to be made that way. It takes the skill of an expert machine tender to produce paper free of the initial strains that cause curl. It takes calendering know-how to make a roll of flat coated paper. And before, during and after the manufacturing process, it takes a series of tests and inspections to make sure every sheet will lie flat and the sheets or roll will give you troublefree runs.



2. IT CONTINUES THROUGH THE FINISHING OPERATIONS

To be conditioned to the proper moisture content for nation-wide use, paper must be carried through the mill's finishing operations. Here Mead Mills use temperature controlled atmosphere; the paper is exposed only to conditioned air. Tight edges and wavy surfaces are impossible under these ideal conditions. But the next problem is to maintain the moisture content until the paper reaches your pressroom.

3. AND EVEN IN YOUR PRESSROOM

Our finishing department's slogan is, "The customer is the next inspector." Paper conditioned by Mead methods lies flat and shows a minimum of stretch or shrink in any pressroom; but that is another story. To preserve these conditions in transit or storage, a paper moisture-barrier wrap is employed on every package or skid: the famous Mead moisture-proof wrap that brings you Mead Papers in mill condition.

You will find Mead Papers easy to work with, because we have done everything possible to make them lie flat and feed well. When you need troublefree runs and a diversified line of papers for letterpress, offset and gravure printing, you can get it all from Mead, Papermakers to America.

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Papermakers to America

MEAD papers

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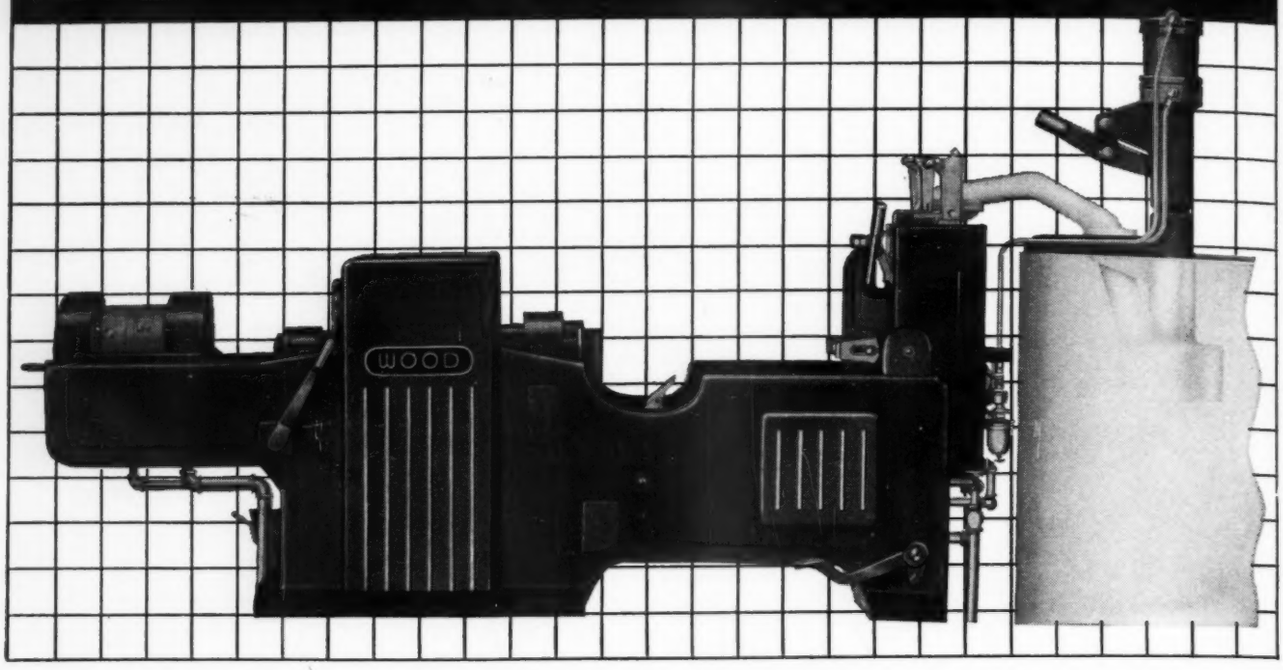
THE *NEW* STANDARD PONY AUTOPLATE



Casts BETTER plates, FASTER...

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Wood

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PLAINFIELD, NEW JERSEY

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MAKERS OF STEREOTYPE AND REELROOM EQUIPMENT FOR OVER A HALF CENTURY

For More Information Circle 190 on Reader Service Card

OCTOBER 1957
VOL. 88, NO. 1

PRINTING EQUIPMENT *Engineer*

THE PRINTING PRODUCTION MAGAZINE

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in all major processes of the Graphic Arts industry.

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Accepted as Controlled Circulation Publication at Cleveland, Ohio.

OUR COVER: The "sea of books" on this month's cover is our way of telling you the book industry's print order for 1957 is estimated to be more than 760 million copies. The scene is the book storage area of one of the world's largest printing plants—Doubleday & Company, Inc.'s Hanover, Pa. plant. In 1956 the book industry enjoyed the best year in its history when sales climbed to an estimated $543 million. Despite television and other distracting influences in the home, here is proof that Americans are reading more books than ever before in history. To keep up with the demand publishers are printing 9500 new titles each year in addition to reprinting about 2500 titles. Added to these are the older books which are always kept in print.

Equipment & Supplies

If you wish additional information concerning equipment, supplies, and/or technical literature, please make your request on *Printing Equipment Engineer's* Reader Service Card found in this issue.

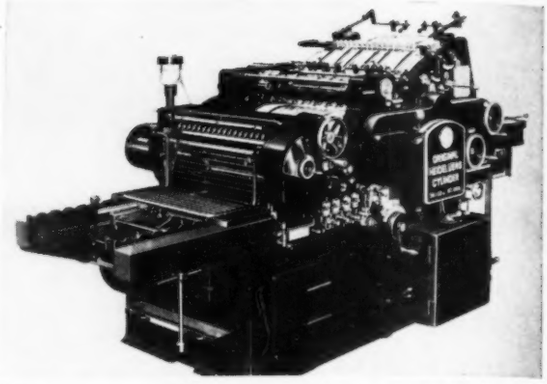
Automatic Scrap Handling and Baling System

The automatic scrap paper handling and baling system, announced by Balemaster Div., East Chicago Machine Tool Corp., is designed to reduce scrap collection costs, improve plant housekeeping, and increase baled scrap's market value. To be known as the Cyclomatic System, it consists of a series of pneumatic ducts hung from the ceiling which are connected to down ducts at all points of scrap accumulation within a plant. Suction boots are attached to the machines or to the floor.

These ducts may lead to either the baling department or storage bins. If the scrap is temporarily stored, it is

(*Continued on Page* 14)

A 15 in. by 20½ in. size has been added to Original Heidelberg's line of automatic cylinder letterpresses. New features are mentioned by the manufacturer in announcing the press. Speed is claimed to be up to 5000 i.p.h.



Heidelberg Cylinder Press Offered in New Size

A new size Original Heidelberg automatic cylinder press, the 15 in. by 20½ in. model, has been announced by the Heidelberg organization. The press features rated speeds up to 5000 i.p.h., a large single revolution cylinder, and heavy one piece base with six point support. Single lever control automatically sets in operation all press functions in correct sequence. A curved feedboard is a new feature which sponsor claims provides sheet maximum stability when being registered.

Mechanical grippers require no adjustment for weight or size of paper. Another new feature is in the delivery end of the press where a slow down of the chain grippers occurs as the sheet is deposited on the delivery pile.

Heidelberg also mentions a synchronized action of front and side guides and a gripper controlled sheet transfer to the cylinder for hairline register. Four form rollers in three different diameters are part of the inking system. A scale on the chase facilitates form positioning and head bar provides position when locking on bed. The same scale provides settings for side guides, feeder and delivery.

Standard equipment on the press includes one stroke central lubrication system, speed indicator, built-in spray gun, preloading device, built-in automatic washup, two complete sets of rubber rollers, type high gauge, and a two-up device. Specifications are as follows: Max. sheet size, 15 in. by 20½ in.; min. sheet size, 4⅛ in. by 5⅞ in.; range of stock, tissue to 0.020 in. thickness; max. form in standard chase, 14¼ in. by 18¾ in.; speed range, 2500-5000 i.p.h.; gross weight, approx. 7950 lbs.; floor space, 55 in. by 8 ft. 4 in. Circle No. 273 on Reader Service Card.

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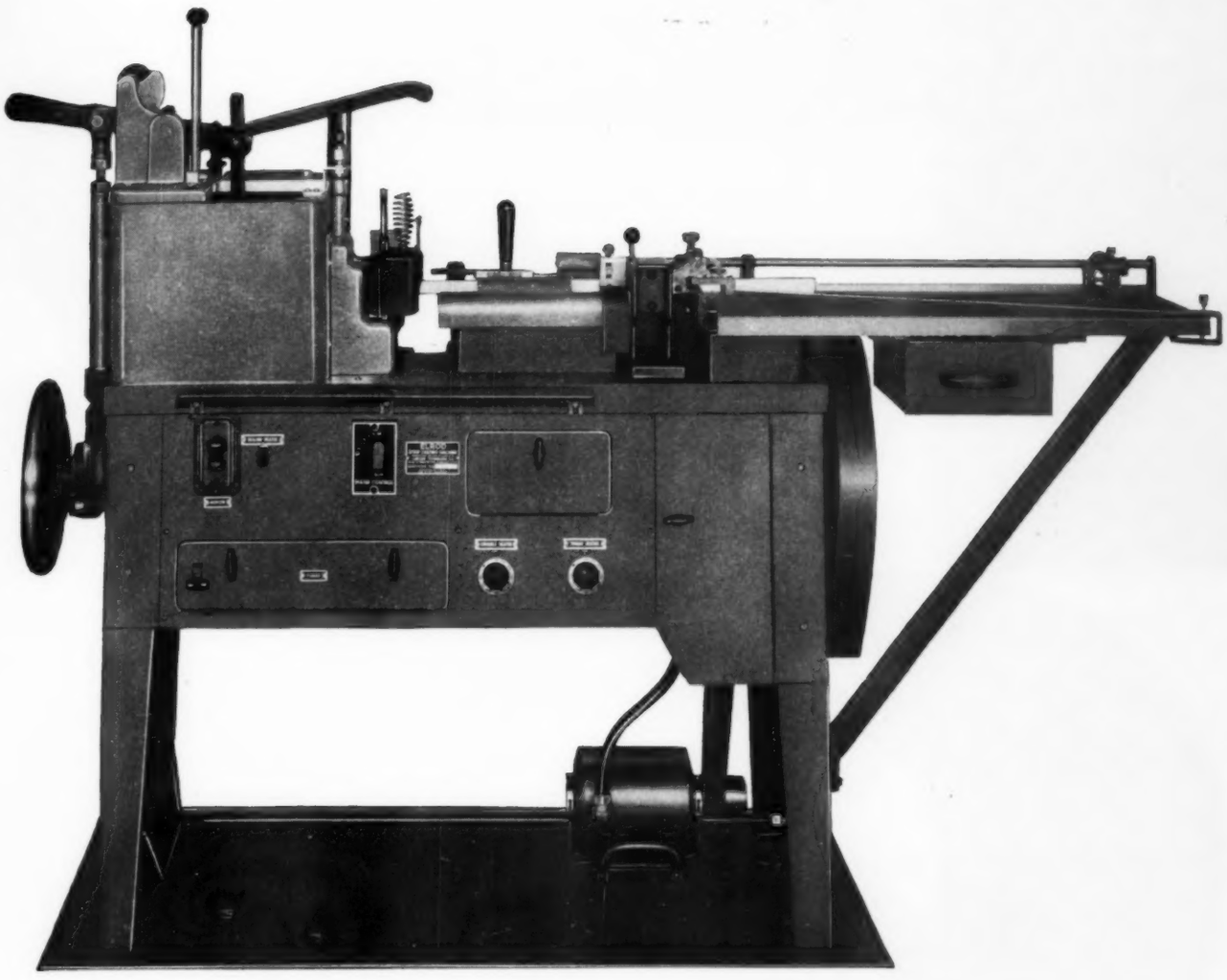
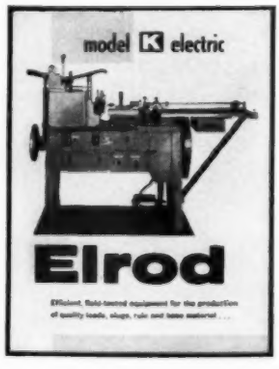


model K Elrod



Send for your free copy of this new folder on the Model K Elrod

The Ludlow Company introduces the newest member of the Elrod family—the model K for the production of leads, slugs, rule, and base material from 1 to 18 points in thickness.

Ludlow's established reputation for simplicity, dependability, and production results has been built into this new model K. The addition of the model K now makes available a choice of six different Elrod models to fit your particular needs. It has been field-tested and is ready to work for you.

Elrod users can profitably add the model K as supplementary equipment, thus permitting continuous operation on 2 point leads, 6 point slugs, or other largely used material. The model K uses standard Elrod molds up to 18 points, and these molds are interchangeable in all six Elrod models.

Ludlow Typograph Company 2032 Clybourn Avenue, Chicago 14

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OCTOBER '57

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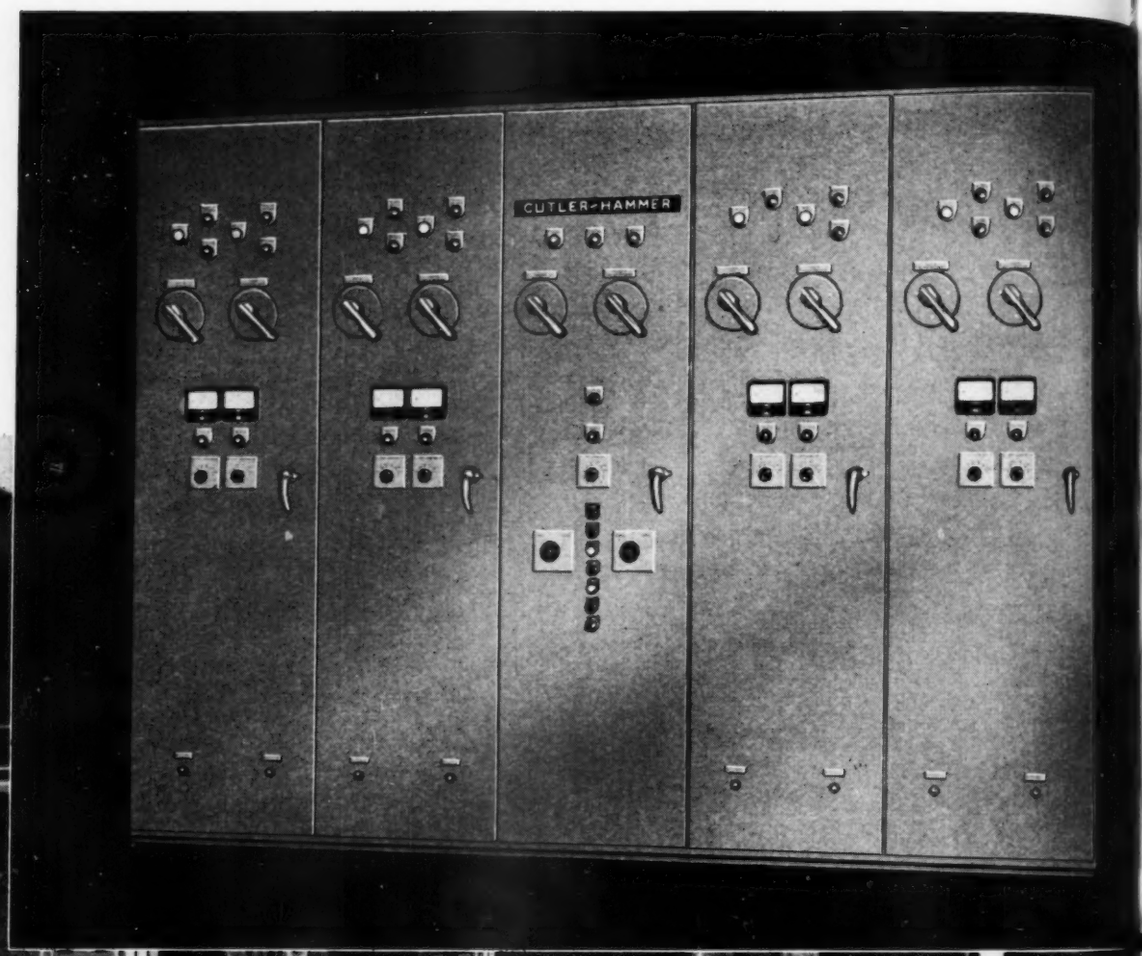
For More Information Circle 56 on Reader Service Card

The New CUTLER-HAMMER

- **Automatic Control Interlocking of Units to Folder**
- **Smoother Press Performance**
- **Simplified Inspection and Maintenance**

The new press facilities at the Washington Evening Star call for 42 Goss Headliner press units and 6 folders . . . all will be equipped with the *new* Cutler-Hammer A-c Unit Press Drive and Control.



A-c Contactor Type Unit Press Control

Automatic control interlocking of units to folder—the *new* Cutler-Hammer A-c Unit Press Control provides the perfect answer to the old set-up problem of coordinating the controls of multiple press units to agree with the webbing of the press. Now the pressman automatically interlocks the controls for each press unit feeding the same folder by positioning the unit selector switches mounted on the pressman's set-up control panel. Nothing could be easier . . . nothing could be quicker. And this space-saving set-up control panel can be mounted wherever it is most convenient for the pressman.

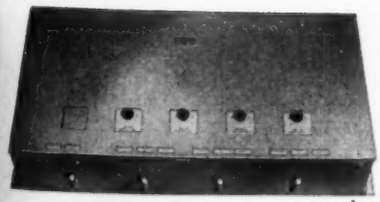
Smoother Press Performance—The *new* Cutler-Hammer A-c Unit Press Control utilizes a supervisory section on each folder to synchronize the control functions of every unit set-up to feed into it. The pressman has absolute control of his press at all times, precise threading and inching action, satin-smooth acceleration from start to top speed, and strain-free dynamic braking.

Simplified Inspection and Maintenance — Inspection and maintenance of newspaper press equipment must be conducted on a regular basis to keep the presses operating at peak efficiency. Knowing this, the *new* Cutler-Hammer A-c Unit Press Control was designed to help the maintenance man get his job done as quickly and efficiently as possible. Every unit can be inspected *while the press is in operation* under actual operating conditions . . . no special test benches required. Every control component is front-of-panel mounted . . . clearly visible and easily reached for trouble-free inspection and service.

The control units are made up of simple, sturdy, industrial components. Every maintenance man is thoroughly familiar with this type of equipment and can perform any service necessary with complete confidence. A special feature of this *new* Cutler-Hammer A-c Unit Press Control is the time-saving "Trip-Locator" which automatically pin-points the source of trouble when a breakdown occurs.

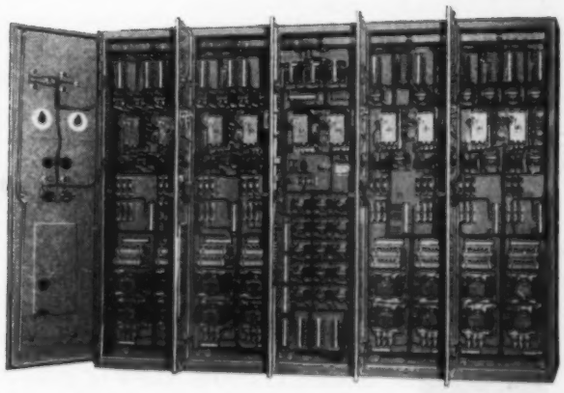
This *new* Cutler-Hammer A-c Unit Press Control is the very finest on the market today. The publishers of seven daily newspapers have already ordered this new Cutler-Hammer Control for a total of 105 units and 17 folders. If you are building a new press plant, expanding existing facilities, or modernizing an old pressroom, your best guarantee of top performance is a *new* Cutler-Hammer A-c Unit Press Drive and Control. Write today and get all the facts. CUTLER-HAMMER, Inc., 1460 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
MOTOR CONTROL
C-H



The pressman's set-up control panel automatically interlocks the control functions for the press units and folder to agree with the webbing.

The Cutler-Hammer Trip-Locator pinpoints trouble in an instant . . . saves valuable time the maintenance man would waste searching for the source of trouble when a breakdown occurs.



The *new* Cutler-Hammer A-c Unit Press Control simplifies inspection and maintenance because *every* control component front-of-panel mounted for clear visibility and accessibility. Authorized personnel can inspect this control while the press is in operation under actual operating conditions.

For More Information Circle 47 on Reader Service Card

They set in a SPLIT SECOND!

91	Job Black for absorbent stocks. Can be left on press several days.
92	Regular Job Press Body Black. No drier, can be left on press overnight.
93	Halftone Cylinder Black. No drier, can be left on press overnight.
94	Halftone Cylinder Black. Contains drier, *cannot* be left on press overnight.
95	Halftone Cylinder Press Black. Contains drier and compound for added rub and scratch resistance. *Cannot* be left on press overnight.
47	Offset Halftone Black, most popular. Contains drier, and *cannot* be left on press overnight.

IPI Speed King Blacks are newly improved packaged inks. There are six different blacks for different specific uses: A job black for absorbent stocks, a regular job press body black, three halftone cylinder press blacks and an offset halftone black. Although these blacks vary somewhat in degree of characteristics, in general they offer these advantages:

1. Split-second setting
2. Ultra fast drying
3. Improved press stability
4. Less dryback—almost as bright dry as wet (on coated stock)
5. High finish on coated stocks and brilliant finish on enamel, *Kromkote*, *Lusterkote* and C1S label papers
6. Print sharp and clean

If you have not yet tried Speed King blacks, contact your IPI salesman. He will be glad to arrange a trial run.

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Color is the focus of today's living. Be it cars or cartons, telephones or television, the American public is accustomed to—and demands—more color.

What has *your* newspaper done about that demand? 819 dailies in the United States *have* done something—they've put color to work for them.

Ads in color attract far more returns—53% more, as a matter of fact! The Newspaper Advertising Executives Association survey proved that. Advertisers want that drawing power, and the newspaper with color is the newspaper that gets their business. The best in color—color that sells and makes money—comes through Hoe equipment.

The benefits of color are yours with Hoe color equipment—the most advanced, the finest there is. Hoe has consistently set the pace for new engineering advances, always anticipating your printing needs. Both for the present and the future, Hoe products are without equal.

In our age of color, *you can't afford not to get in touch with Hoe.*

For More Information Circle 87 on Reader Service Card

R. HOE & CO. INC.

910 East 138 Street • New York 54, N. Y.

BRANCHES: BOSTON • CHICAGO • SAN FRANCISCO

Equipment and Supplies

(Continued from Page 6)

re-air-conveyed to the baling department at the proper time.

Heavy scrap material may be disposed of by the installation of a pinch table conveyor and hogger (see *Printing Equipment Engineer*, Mar. 1956, p. 74). The pinch table conveyor crushes the scrap and feeds it directly to the hogger where it is chopped and torn into small pieces which may then be carried by the air-conveying ducts to the baling department.

At the baling department the scrap is separated from the air by means of a Cyclone air separator. The separated scrap then drops by gravity into the baler feed chute. When enough scrap has accumulated in the chute an electric eye activates the baler's hydraulic ram compressing the scrap to a thickness of approx. 3 in. Bales formed in this baler are 26 in. by 32 in. by any desired length up to 72 in. When the bale has reached the desired length, the operator inserts five wire ties and the operation is completed. Circle No. 255 on Reader Service Card.

Flexographic Inks

A line of flexographic inks, said to produce rich metallic effects on moistureproof cellophane, has been developed by Bensing Bros. and Deeney. Called Gold-Tone, the inks are claimed to have the appearance of regular gold bronze inks. According to the manufacturer, inks do not tarnish with age and have less tendency to separate in the fountain. Gold-Tone inks are designed for reverse printing and are supplied in ready to use form. Circle No. 268 on Reader Service Card.

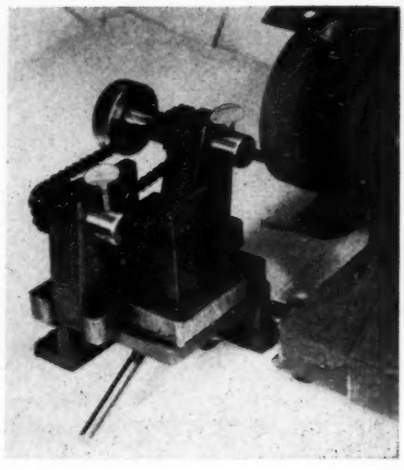
Router Bit Grinder

One of the most interesting recent developments in the entire platemaking field is the router bit grinder fixture device for use by photoengravers, stereotypers and electrotypers. The device was developed by Vice Pres. Dan Green of Wesel Manufacturing Co. The device can be fastened opposite any bench mounted grinder.

The fixture was developed to permit grinding router bits as they should be ground with minimum removal of useful cutting edge. When bits are sharpened by hand there is always a waste of cutting edge. Then, too, no matter how skilled the router operator may be, no two bits are sharpened exactly alike when ground by hand.

Sponsor states that by using the Wesel device bits can be uniformly and accurately sharpened with proper clearance by removing from 0.005 in. to 0.010 in. from the cutting edge when grinding only the dull cutting edge and its clearance.

The device is equipped with a sort of profiler mechanism. That is, with this device, an inexperienced operator can sharpen a dull bit expertly because he fits into a chuck the pattern bit to which the contour of the cutting edge of the dull bit is to be ground.



When about to sharpen a dull bit, the operator places a new bit, or one he has reground as he wants it, in the master chuck. He then adjusts a follower screw in contact with the master bit. He places the bit to be ground in its chuck, puts the dull bit in contact with the grinding wheel. He turns a simple control until the now sharpened bit quits sparking. Circle No. 253 on Reader Service Card.

(*Continued on page* 18)

12 RE-ORDERS...

STAR PARTS, INC.
SOUTH HACKENSACK, NEW JERSEY

DATA SHEET FOR STAR QUADDER INSTALLATION
Please Complete Data Sheets in Duplicate

Company Name DeLuxe Check Printers, Inc. Date of Order 5/10/57
City Chatsworth State Cal.

Performance PROOF of
STAR SELECTRO-MATIC QUADDERS

In April 1955 De Luxe Check Printers Inc., one of the largest and most progressive check printers in the country with plants located in cities from coast to coast, installed their first Star Selectro-Matic Quadder. Since then De Luxe has re-ordered 12 additional times and have purchased a total of 18 Star Quadders, the latest—5 new quadders for their Chatsworth, California, plant.

The installed Star Quadders are operating efficiently for long hours at high speeds on Teletypsetter-equipped machines.

Take a tip from De Luxe Check Printers, Inc. Make your next composing room improvement a Star Selectro-Matic Quadder on every line-casting machine handling "white space" composition. Get the details now by writing for complete information.

BRANCH:
1327 BROADWAY, KANSAS CITY, MO.
AGENCIES:
CHICAGO • MINNEAPOLIS
LOS ANGELES • DENVER • SO. ACTON, MASS.
CANADA: SEARS LTD. AND AGENTS OVERSEAS

STAR PARTS, Inc.
Precision TRADE ★ MARK Parts
SOUTH HACKENSACK, N. J.

For More Information Circle 167 on Reader Service Card

SETTING NEW STANDARDS

FOR *High Speed* GATHERING

There's really only one way to full appreciate all the advantages and productive ability of the fast Dexter "300" Arm Gatherer and that's to see it in actual operation. But before you do here's a quick "preview" of a few of its features.

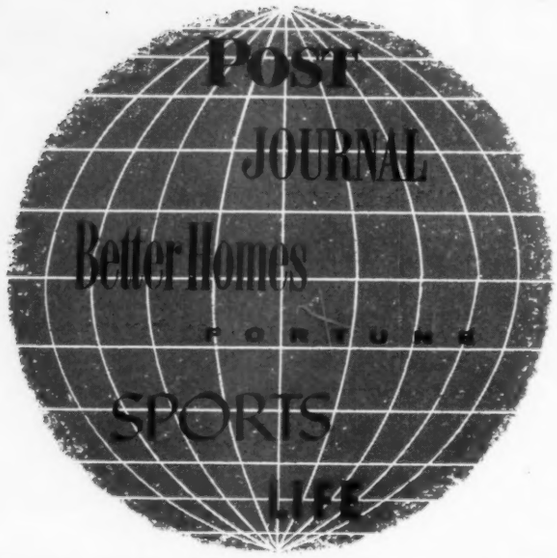
It's built on the Unit Construction principle in four-pocket sections, which means you can install just the number needed initially and add sections as volume grows, up to 48 pockets. Lightweight construction in the oscillating gripper arms—*where it's necessary*—reduces vibration to the minimum which means longer life and consistent accuracy at high speeds. And the "300" has reserve speed—*up to 140 cycles per minute!*

There are other features too...many others, all combined to accomplish one objective—fast, efficient gathering and more profits for you. But, as mentioned above, the only way to appreciate all the advantages is to see the Dexter "300" Gatherer perform. Call your Dexter representative and have him arrange a demonstration. And if you want more of a "preview"...

Write or call today for our descriptive folder

DEXTER FOLDER COMPANY
DIVISION OF MIEHLE-GOSS-DEXTER, INC.
219 East 44th Street, New York 17, New York

For More Information Circle 49 on Reader Service Card



YEAR AFTER YEAR THESE EXAMPLES OF TYPOGRAPHIC PERFECTION ARE SET ON MONOTYPE EQUIPMENT!

For examples of typographic perfection examine the pages of these magazines, set by the MONOTYPE System . . . and you will agree that here is typography at its best.

In every case publishers, whose aim is perfection, choose MONOTYPE not only for its clarity, readability and ease of correction but also because they know that it *costs less from copy to press* than other typographic methods.

MONOTYPE can give your customers the same high quality composition . . . type setting with incomparable eye appeal for advertising copy, technical literature, book composition, tabular matter, magazine work, etc.

It will pay you to look into the advantages of MONOTYPE. Use the coupon below for our newest literature describing MONOTYPE Equipment.

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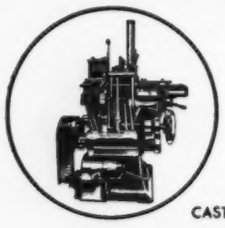
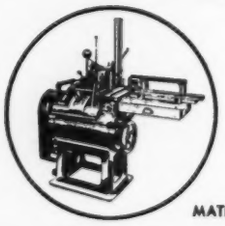

CASTER


MATERIAL MAKER

GIANT CASTER

Type set in Monotype faces, Modern Gothic, Bulmer, and 20th Century.

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A DIVISION OF LANSTON INDUSTRIES INCORPORATED

24th & Locust Streets • Philadelphia 1, Pa.

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LANSTON MONOTYPE COMPANY
(A Division of Lanston Industries Incorporated)
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Send new literature on the Lanston Camerama ☐ Step & Repeat Machine ☐
MH Overhead Camera ☐ Vertical Plate-coating Machine ☐ Magnastep ☐

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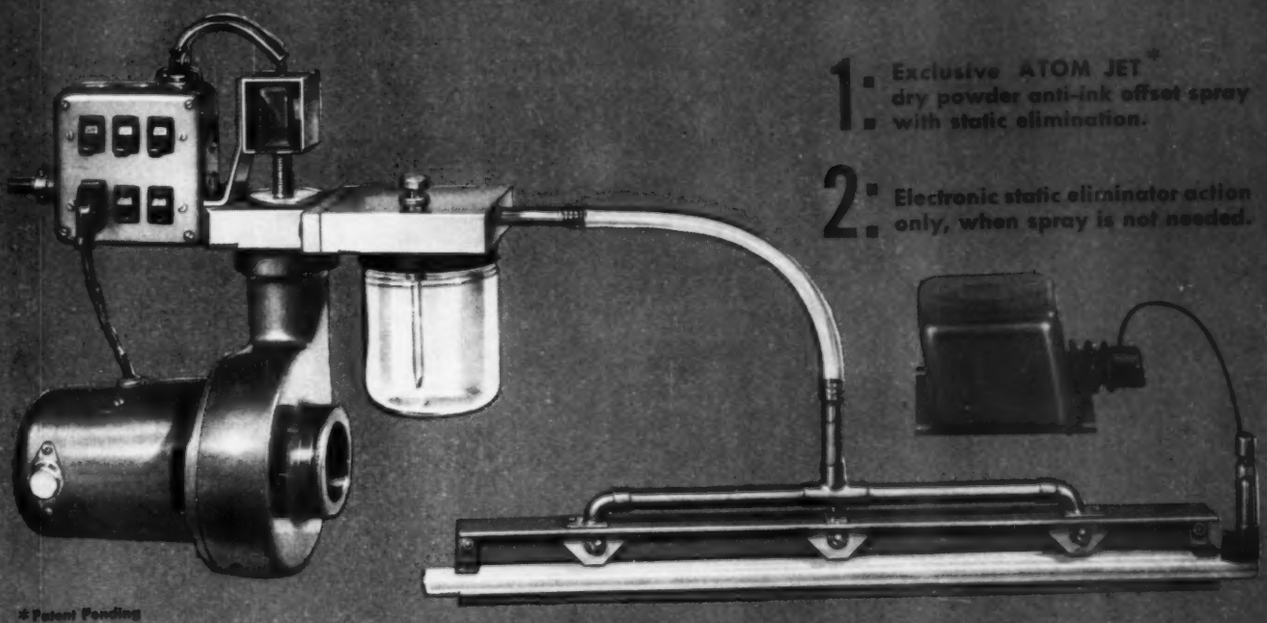
For More Information Circle 102 on Reader Service Card

For More Information Circle 140 on Reader Service Card→

NEW OXY-DRY DOUBLE-ACTION ATOM JET INK OFFSET PREVENTION SPRAYER



1. Exclusive ATOM JET* dry powder anti-ink offset spray with static elimination.

2. Electronic static eliminator action only, when spray is not needed.

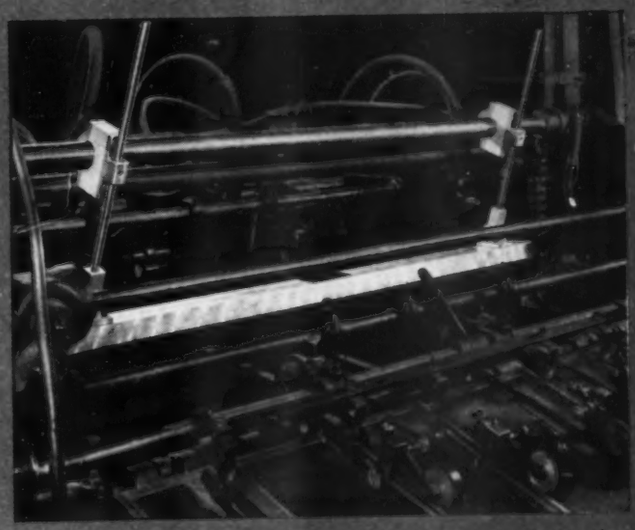
* Patent Pending

FOR ALL SMALL PRESSES FROM MULTILITH TO 21"x28" PRESS SHEET SIZES

Now, dry powder can be *bonded* to the press sheet at maximum speeds on small presses by OXY-DRY electron tube dispersal technique. The ATOM JET SPRAYER incorporates as many of the famous OXY-DRY patented electronic dry powder dispersion principles as can be included in a sprayer for *small* presses up to 21" x 28".

The ATOM JET SPRAYER coats sheets evenly and completely and removes static electricity at the same time. This means, *full, free-flowing* loads, *perfect ink offset prevention, greater* press speeds, *cleaner, clearer, sharper* impressions. No static to slow up operations. And, when ink offset prevention is not needed, the electronic neutralizing action can be run independently of the dry powder sprayer.

This *double action* at great savings is yours only with the ATOM JET SPRAYER. It is the OXY-DRY answer to the tremendous demand for an OXY-DRY sprayer for small presses that would have the most outstanding features of our major press equipment at a cost well within reason! For more details write, wire or phone us today.



Optional equipment: Our *Electronic Neutralizer* can be positioned at the *feed* end of the press, using the same transformer that operates the ATOM JET SPRAYER at the delivery end; about $50 additional.

OXY-DRY SPRAYER CORPORATION

NEW YORK CHICAGO SAN FRANCISCO

Dept. PE, 1134 West Montrose Avenue, Chicago 13, Illinois

Also Manufacturers of:

ANTI-INK OFFSET POWDERS • ELECTRONIC NEUTRALIZERS • SHEET CLEANERS • WEB CLEANERS • DIE-CUT BLANK CLEANERS • PLATE WASHERS & DRYERS • PLATE GRAINERS

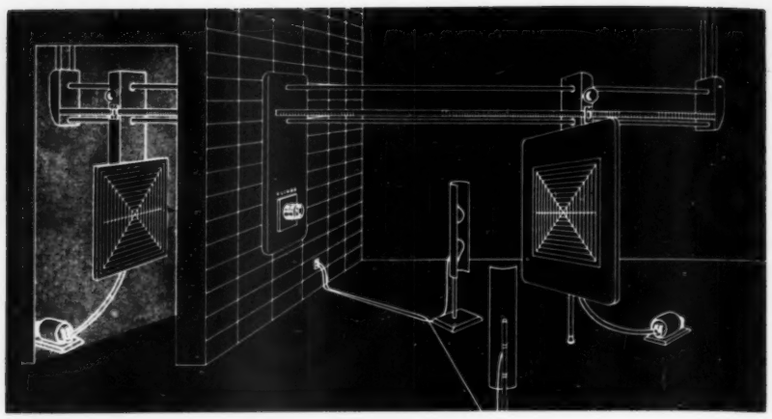
Equipment and Supplies

(Continued from Page 14)

Glider Camera for Platemaking

The Glider camera, states W. A. Langford Co., is designed for use in plants operating medium and small size presses in which the camera will not take up too much floor space. The camera is intended for use by the letterpress printer, offset platemaker, silk screen printer or lettershop operator.

The vacuum back is equipped with a Gast ¼ h.p. pump and motor. Uses film up to 20 in. by 24 in., although, due to lens focal length, best results will be obtained in sizes 16 in. by 20 in. or smaller. Contact screen may be used for halftone work.



Lighting is by four No. 2 photoflood lamps in polished aluminum reflectors. Camera is equipped with Tompsen ball bushings.

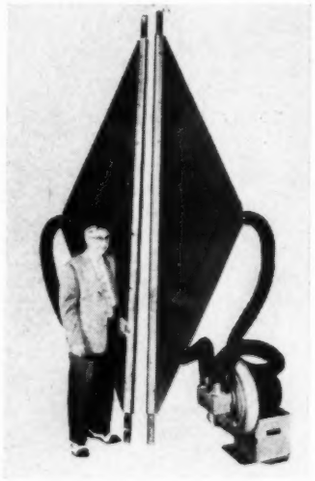
Overhead design permits ceiling mounting. Scaling is by percentage system. Reductions approx. 4:1 and enlargements approx. 2:1 are possible.

Lenses are made by Goerz. A 14 in. Red Dot is used. The coated lens is corrected for four colors.

Vacuum copyboard is 30 in. by 40 in. with 20 in. by 24 in. center portion vacuum operated. Motor is ⅓ h.p. Circle No. 251 on Reader Service Card.

Large Vacuum Cleaner

What is believed to be the largest vacuum paper cleaner ever built has been installed in the plant of Bathurst Power and Paper Co., Ltd., Bathurst, New Brunswick, Can. The cleaner was made by the J. E. Doyle Co. Chas. E. Doyle, president, stands beside the cleaner. The cleaner is designed to remove surface dust and cuttings from the paper as it leaves the slitting machine preventing the shreds from being wound into the rolls. This cleaner also is used to remove dirt and lint from both top and bottom surfaces of the paper as well as the loose edge particles as it passes between the two manifolds, each 126 in. wide. Circle No. 259 on Reader Service Card.



(*Continued on Page* 26)

Special Service is routine with the Burgess representative

The Burgess representative is an experienced stereotyper. His travels take him into all types of plants with equipment and work of every description. He is at your service with valuable assistance. And he especially likes to help on those tough problems. His product—Burgess Mats—is top quality, too. Together, they make quite a team. Try them.

BURGESS CELLULOSE COMPANY

Manufacturers and Distributors of
Burgess Chrome and Supreme Tone-Tex Mats, Freeport, Illinois

Canadian Representative, R. M. Louson & Co., Ltd.,
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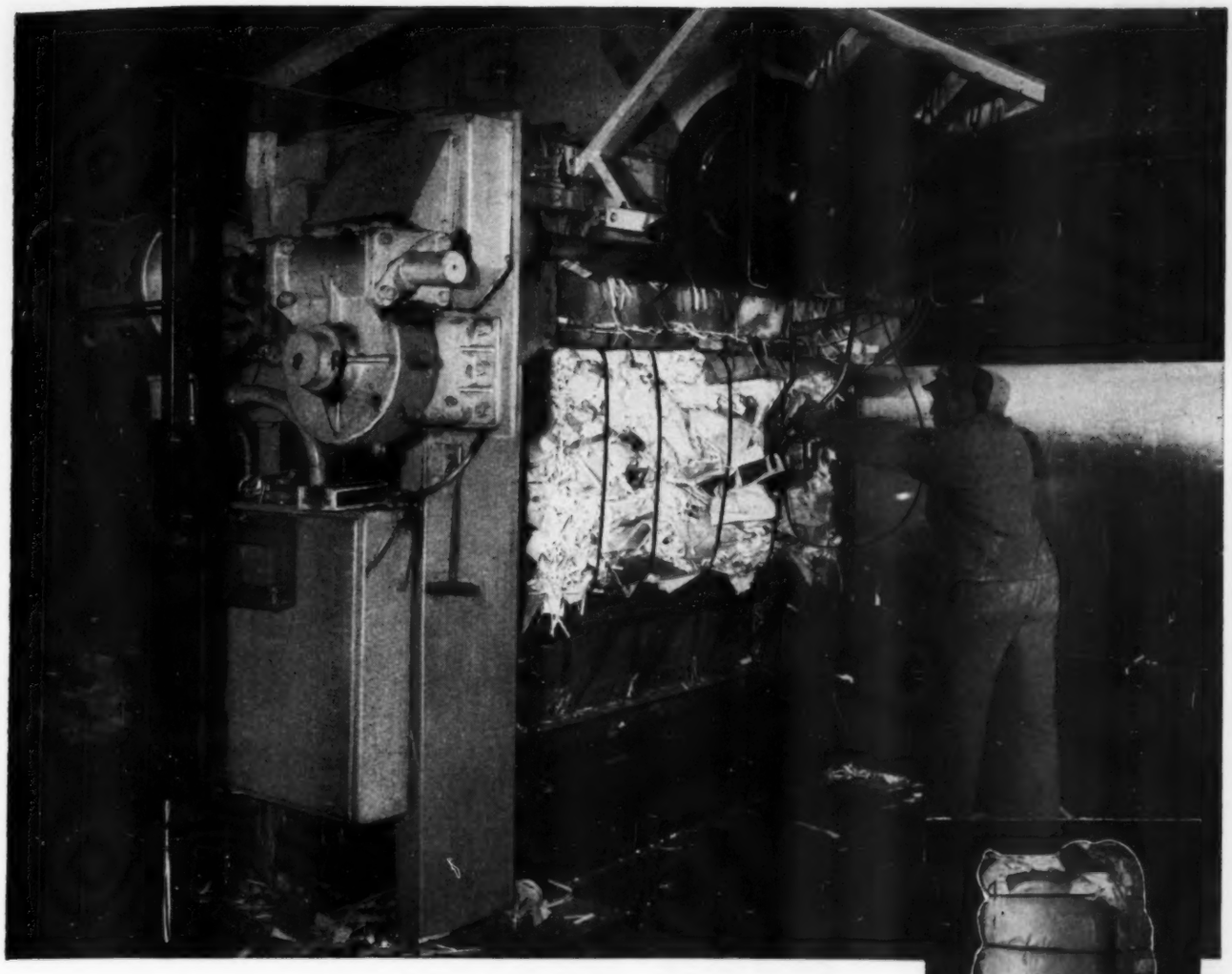
A Laboratory Product
BURGESS Chrome MATS

For More Information Circle 26 on Reader Service Card



BALE WASTE PAPER?

New Signode way is faster, easier, cheaper, safer
. . . uses your present baling press!

Faster and *easier* because fewer ties are needed per bale; the inexpensive Signode setup eliminates waste motions of reaching, twisting, splicing; strapping feeds handily from conveniently located overhead dispensers.

Cheaper because bales are 29% denser, take 43% less strap per bale, save 25% of room in storage and in trucks; steel strapping stays tight, bales hold shape without bulging and wedging in transit; steel strapping itself can be unloaded from cars or trucks quickly and neatly with a lift truck.

Safer because flexible strap ends drop down, are easy to see; no sharp ends poke at man on receiving side; bales are squarer, firmer . . . safer and neater to handle, stack, load.

It's easy to change to this new method—now used by some of the biggest balers in the country. Signode fieldmen know how to adapt it to your present baling equipment . . . are ready to work with you now. If you bale waste paper or any other compressible material or product in any quantity, call the Signode man near you, or wire or write:

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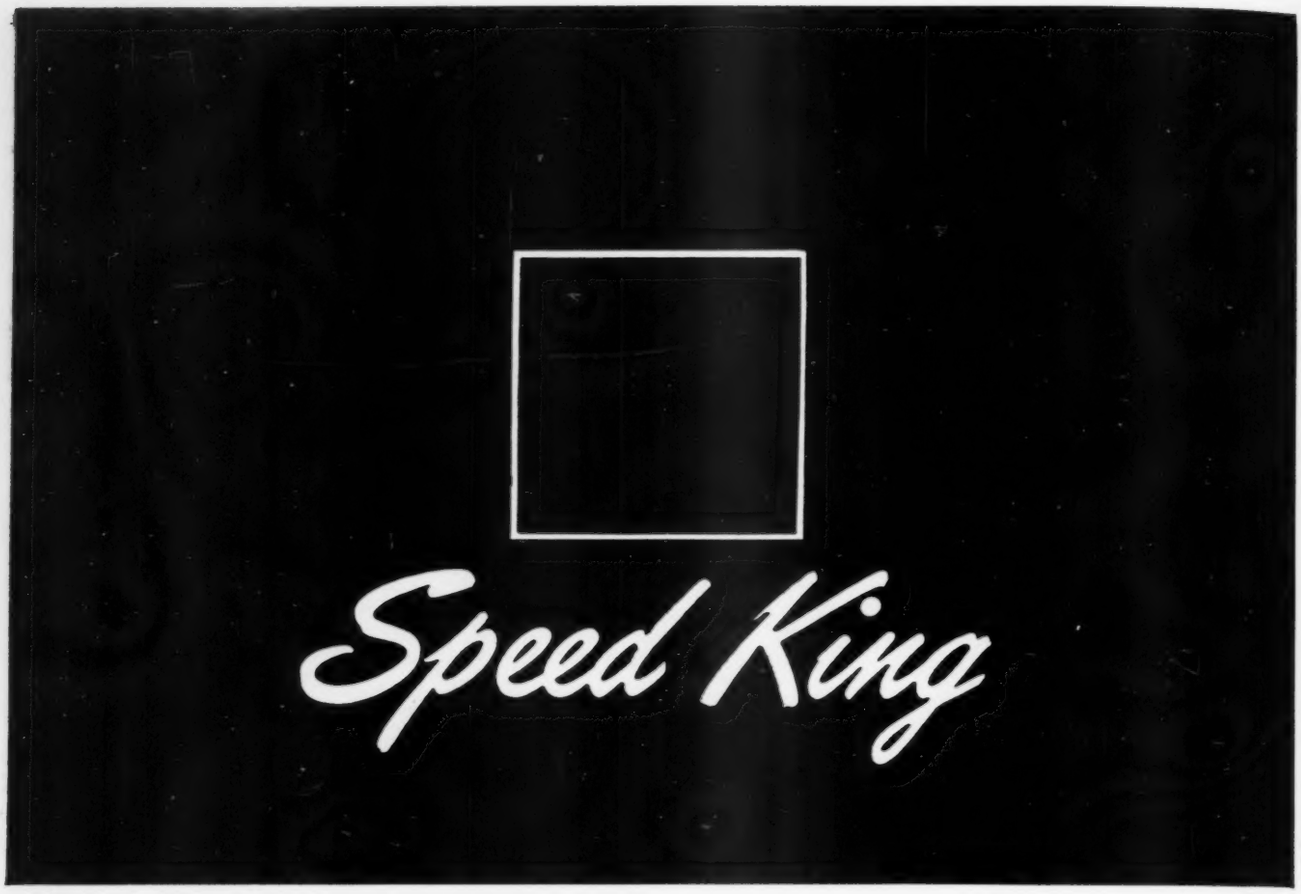
For More Information Circle 160 on Reader Service Card



now...even faster drying!

NEW "SPEED KING" INKS GIVE YOU ALL THESE EXTRAS:

EXTRA rapid setting, faster drying

EXTRA press stability and resistance to dryback

EXTRA high finish on coated stocks

EXTRA brilliant finish on enamel, *Kromekote*, *Lusterkote* and C1S label papers

EXTRA sharp, clean printing with ink precision controlled for uniformity

IPI Speed King is a newly improved line of packaged inks for letterpress, thoroughly tested commercially, precision controlled for uniform quality in every can. These inks are ideal for ultra fast setting and drying, and high finish on coated stocks. Larger loads—often full loads—can be run without winding or using excess spray. Yet, with proper stock, Speed King inks give a high finish. Packed in 1 lb. and 5 lb. cans, the line includes the 12 colors most popular with printers and Speed King Halftone Black #94. Order now from your IPI salesman.

IPI, IC and Speed King are trademarks of Interchemical Corporation

INTERCHEMICAL PRINTING INK
CORPORATION DIVISION

EXECUTIVE OFFICES: 67 W. 44th ST., NEW YORK 36, N. Y.

For More Information Circle 202 on Reader Service Card

"Safest stuff we ever walked on."

He's talking about A.W. ALGRIP, the world's only abrasive rolled steel floor plate . . . the safety floor plate that provides super-safe footing around presses and under the *most hazardous* slipping conditions.

Dozens of leading printing plants nationwide have licked slipping and skidding hazards caused by ink mist and oil by installing ALGRIP.

This exceptional safety plate is made by a patented process during which hard grinding-wheel type abrasive particles are rolled—not coated—to a controlled depth as an integral part of tough steel plate. Usage merely exposes more abrasive surface.

Make a test installation in your most dangerous slipping area. Watch ALGRIP pay for itself as accident and insurance rates go down. ALGRIP fabricates easily and requires no maintenance.

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

ALGRIP—*approved for safety by Underwriters' Laboratories*

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Please send me A. W. ALGRIP Booklet AL-S30

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____ State_____

OTHER PRODUCTS:
A. W. SUPER-DIAMOND rolled steel floor plate—Plates—Hot and cold rolled sheet and strip—(Alloy and Special Grades)

For More Information Circle 4 on Reader Service Card

Literature

Circle Numbers on Reply Postcard—It's Easier and Quicker

Keep Yourself Informed. The folders and bulletins listed below all pertain to modern equipment, supplies, processes and/or methods. These have been prepared especially for plant managers, superintendents and foremen. Please circle the numbers on the Reader Service Card in this issue for the bulletins you wish to receive. Drop the self-addressed card in the mail. *Printing Equipment Engineer* will forward your request.

Composing Room

NELSON SAW-TRIMMERS

A four page bulletin regarding the construction, operation, and specifications of bench and console model Nelson saw-trimmers has been issued by the Pate Company. Details concerning the three Nelson models, as well as individual price listings, are included in the illustrated bulletin. Circle No. 315 on Reader Service Card.

ATF SPECIMEN CATALOG

American Type Founders Co. has published the 1957 edition of *ATF Typographic Accessories*, a specimen catalog and price list of ornaments, Handypacks, initials, monographs, and auxiliary fonts manufactured by ATF. Cast from foundry metal, the accessories are said to be made with all the printing and wearing qualities of ATF type. Circle No. 308 on Reader Service Card.

RECORD GOTHIC

Complete showings of all members of the Ludlow Record Gothic typeface family are available from Ludlow Typograph Co. Circle No. 333 on Reader Service Card.

RANGEMASTER BULLETIN

Mergenthaler Linotype Co. is offering its illustrated Rangemaster Model 35 bulletin. Rangemaster mixer, without auxiliaries, is used to set through normal 36 pt. and condensed 48 pt. headlines. Circle No. 335 on Reader Service Card.

SAW TRIMMERS

The Morrison Co. has issued a complete catalog on its saw trimmers. Trimmers feature being the gauge workholder. Circle No. 337 on Reader Service Card.

STAR QUADDER

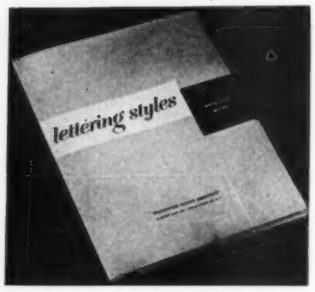
Literature regarding the Star Selectro-Matic quadders is available from Star Parts, Inc. Quadders are equipped with push button controls. A pump stop signal indicates when current is flowing and a second signal lets operator know when a line is being cast. Circle No. 330 on Reader Service Card.

POWER MITERER

A catalog descriptive of the Rouse power mitterer is available from H. B. Rouse & Co. Machine is claimed to enable 800 miters in 45 min. Circle No. 338 on Reader Service Card.

LETTERING STYLES GUIDE

A 36 page *Lettering Styles* selection guide featuring 100 new styles, in addition to Filmotype's regular lettering fonts, has been published by Filmotype Corporation. Each style in the 364 alphabets is illustrated and arranged



by weight and condensity for ready comparison. The 100 new styles are featured in various sizes and with screened effects on special display pages. Circle No. 325 on Reader Service Card.

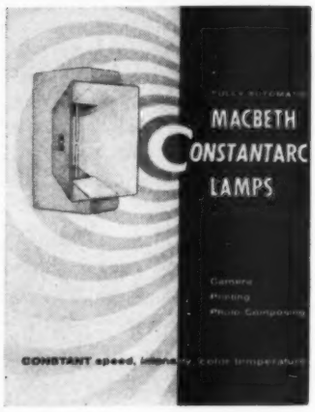
Platemaking

COLOR PROCESS FOLDER

Lithographic Technical Foundation, Inc. is offering a six page folder explaining the uses of the LTF color chart. Chart can be made in individual plants, using inks, papers and presses of the plants. Chart also shows what color values will be obtained when printed from different halftone values on the film or press plates used. Specifications and color gradations of the chart are shown in the folder. Circle No. 314 on Reader Service Card.

CONSTANTARC BULLETIN

A chart designed to be used in the selection of right arc lamps for cameras, printing frames, or photocomposing machines is featured in the Constantarc bulletin available from Macbeth Arc Lamp Co. Bulletin is illustrated



with photographs of installations of some of the lamps, combinations, reflectors, carriers and mountings in the Constantarc line. Circle No. 312 on Reader Service Card.

KODAK DATA BOOK

Information on color correction is contained in a data book, *Masking for Reflection Copy*, announced by Eastman Kodak Co. The 72 page illustrated book is directed to photographers and workers in the photomechanical industries doing color reproduction work. Outlined in the book is a complete method of color correction, reason for and importance of masks, detailed instructions for three separate masking methods, undercover removal for wet printing, and direct halftone color separation with masks. Circle No. 309 on Reader Service Card.

PHOTOVOLT METER

The Photovolt pH meter Model 85 is the subject of literature issued by Photovolt Corporation. Features of the meter are included. List prices of meters, electrodes and accessory and replacement parts are also available. Circle No. 322 on Reader Service Card.

PYREX GLASS PIPE

Corning Glass Works offers an eight page bulletin concerning its glass pipe for drainlines. Pictures of typical drainline installations in chemical process industries, photoengraving plants, and industrial and educational research laboratories are included. Chemicals that can be carried by Pyrex brand glass lines are also listed. Circle No. 306 on Reader Service Card.

WOOD AUTOPONY

Descriptive literature concerning the Wood Autopony is offered by Wood Newspaper Machinery Corp. Autopony casts, shaves and cools, automatically, at the rate 2½ plates per min. Circle No. 332 on Reader Service Card.

WOODSMAN BLADE

Literature regarding the Woodsman carbide tipped blade is offered by North American Products Corp. Circle No. 339 on Reader Service Card.

APS CATALOG

AA Imperial cork blankets, Superior gummed backing felt and Vent A Flex perforated gummed backing felt are described in a catalog available from American Publishers Supply, Inc. Circle No. 341 on Reader Service Card.

Pressroom

WEB CONDITIONER

The J. O. Ross Engineering Corp. offers an eight page, two color bulletin regarding its web conditioner for controlling the addition of moisture to paper, paper board and other materials. Illustrations and descriptions of typical conditioner applications are included. Circle No. 313 on Reader Service Card.

CERUTTI PRESS BULLETIN

A four page illustrated bulletin descriptive of the Cerutti Series R Rotopackager gravure press has been issued by Parsons & Whittemore Graphic Corp., distributors of Cerutti rotogravure equipment. The Rotopackager is designed specifically for converters of cellophane, plastic films, foil, paper and light board. Circle No. 307 on Reader Service Card.

OFFSET BLANKETS

Vulcan Rubber Products, Div. of Reeves Brothers, Inc., announces publication of an eight page folder regarding Vulcan Duroflex offset blankets. Complete list prices are given. Circle No. 323 on Reader Service Card.

DAVENGRAVING BULLETIN

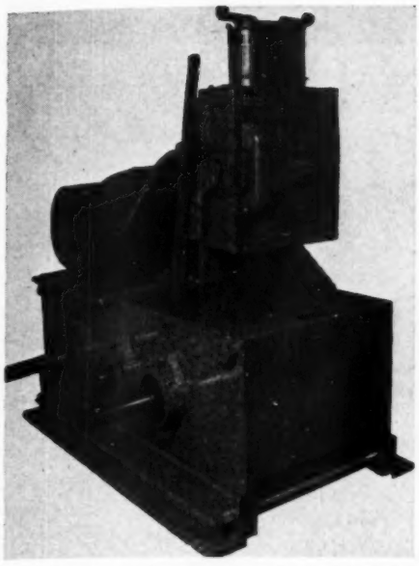
A four page technical bulletin on Davengraving, an embossing process for use on Davidson Dual-Liths, has been issued by Davidson Corporation. Davengraving process is used to reproduce lines of type or designs that are inked and raised above the surface of a sheet. It is performed in one operation on the Dual-Lith, using the two cylinder principle. Circle No. 319 on Reader Service Card.

MIEHLE OFFSET PRESSES

The Miehle Printing Press and Mfg. Co. has issued an attractive four page bulletin regarding its 61 and 76 offset presses. Presses are designed to allow the pressman full and easy access to integral points of operation and adjustment. Circle No. 311 on Reader Service Card.

(Continued on page 63)

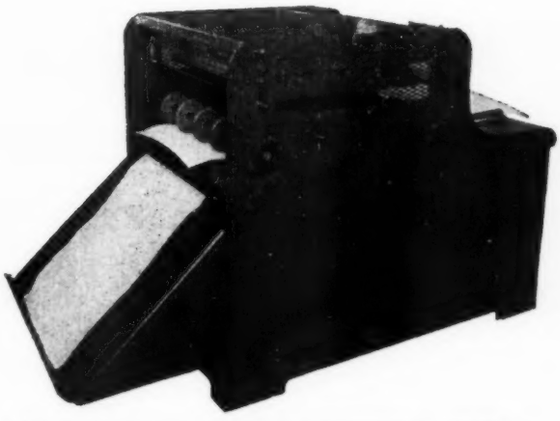
A.P.S. PRODUCTS



COMBINATION TWO-IN-ONE PAPER ROLL LIFT AND REWIND WITH ONE MOTOR ALSO—INDIVIDUAL UNITS REWIND ONLY—LIFT ONLY

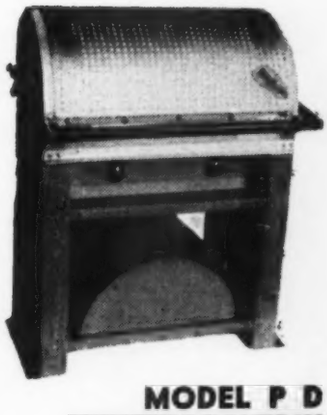
SUPERIOR MATRIX BENCH SHEAR

FLAT AND PRE-SHRINK SCORCHER—THE MOST POPULAR FLAT SCORCHER IN THE WORLD



AUTOMATIC STEREOTYPERS INFRA RED PRE TREATING MACHINE

DRY MAT STORAGE BOX. TWO SIZES— TO HOLD 200 MATS, 250 MATS

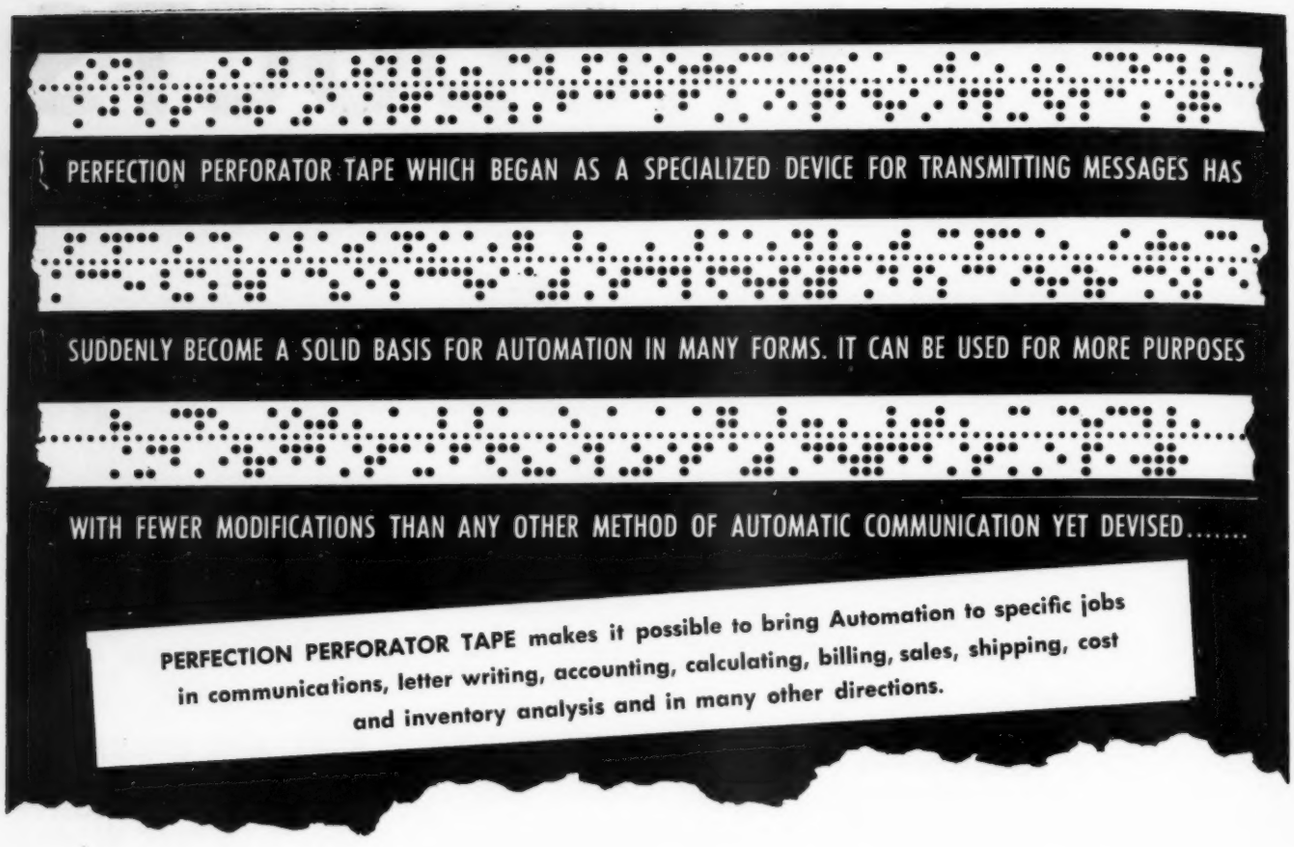


MODEL P D CURVED MATRIX WARMING MACHINE WITH PERFORATED METAL COVER

A.P.S. Incorporated

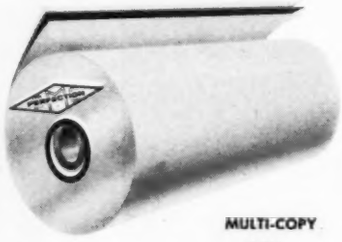
P. O. BOX 421 Lynnfield, Mass.

For More Information Circle 8 on Reader Service Card


PERFECTION PERFORATOR TAPE WHICH BEGAN AS A SPECIALIZED DEVICE FOR TRANSMITTING MESSAGES HAS
SUDDENLY BECOME A SOLID BASIS FOR AUTOMATION IN MANY FORMS. IT CAN BE USED FOR MORE PURPOSES
WITH FEWER MODIFICATIONS THAN ANY OTHER METHOD OF AUTOMATIC COMMUNICATION YET DEVISED.....
PERFECTION PERFORATOR TAPE makes it possible to bring Automation to specific jobs in communications, letter writing, accounting, calculating, billing, sales, shipping, cost and inventory analysis and in many other directions.

More News Space is set from PERFECTION TELETYPESETTER TAPE than from any other brand.

PERFECTION® PRINTER PAPER



MULTI-COPY ROLL

Colors— Canary, White, Pink, and Green.

FOLDED:
Dispenses directly from carton: requires less storage space.
Approximately 2850 ft. of all useable paper.
18" between folds: standard width 8-7/16".
Eliminates message interruption due to roll changes.

ROLLS:
Single or Multicopy, carbon interleaved or carbonless.
Colors may be combined in multicopy.
Diameters and core are standard for all equipment.
Standard widths 6" and 8-7/16"—other widths available.

FOLDED PRINTER PAPER

PAPER MANUFACTURERS COMPANY
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PERFECTION

For Tops in Service and Performance use PERFECTION® BRAND Communication Papers.

132P

Write for booklet of information and samples

For More Information Circle 143 on Reader Service Card

"We couldn't get along without TTS® equipment!"

says Orbell O. Apperson, Jr., Publisher, Mt. Shasta Herald

Publisher Apperson (standing) and his father look on as the TTS operating unit automatically runs the Linotype. Linecasting machines equipped with Teletypesetter may also be operated manually, just by turning the TTS control lever to the "OFF" position.

Mrs. Joan Scott, the Herald's TTS operator, works at the perforator. Working only part-time, she punches all the tape for each week's issue and has time left over for other duties.

"We didn't install Teletypesetter equipment to increase production or cut costs (though it's helped us do both), but to solve an acute problem of help shortage. We were intrigued by the Teletypesetter ads which said an ordinary typist could handle the TTS equipment."

That's part of a recent letter from Orbell O. Apperson, Jr., Publisher of the Mount Shasta (Calif.) Herald. The weekly Herald installed TTS equipment in September, 1952, attaching it to a Model 14 Linotype. Publisher Apperson's letter continues:

"Within two weeks after installation our operator, Mrs. Joan Scott, was turning out usable tapes. After a few more weeks she was doing all our straight matter. In addition, by the baseball season of 1953 she was punching tape for box scores. Working part-time, Mrs. Scott sets between 2700 and 4200 lines per week and has time to keep our ABC subscription accounts and handle the bindery work for our commercial printing.

"We think TTS has given us the equivalent of a second linecasting machine. And we know it has helped cut down on our overtime work—up to eight hours per week, in fact.

"I don't know exactly how long it took us to 'pay' for our TTS, but I'd say we got our money out of it about the third year – and I'm positive we couldn't get along without it!

"Our TTS operating unit is set for 390 lines per hour and Linotype production averages better than 350 lines per hour, with very few jam-ups. We cut in on tape production to set heads, ad guts and make corrections in the straight matter. Incidentally, overtime doesn't slow down the TTS. It's going just as strong at the end of an eight-hour day as it is at the beginning!"

If you would like to cut composition costs and boost production, why not give *mechanical automation* with TTS a try in your shop. You'll agree with daily and weekly publishers all over the country who—like Publisher Apperson —"couldn't get along without TTS equipment!"

For full details write to: Teletypesetter Corporation, Dept. PE-10, 2752 N. Clybourn Ave., Chicago 14, Ill. We'll send you complete information.

TELETYPESETTER®
TTS®

For More Information Circle 171 on Reader Service Card

Equipment and Supplies

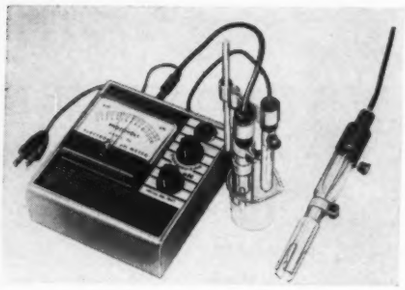
(Continued from Page 18)

Coated Offset

Shorewood coated offset, manufactured by Kimberly-Clark Corp., is being produced as a whiter and brighter paper, it was announced by W. B. Meyer, national sales manager, Printing and Writing Paper Div. Stock is recommended for offset reproduction from standard monotone to multi-color gloss inks. It is available in 60, 70 and 80 lb. basis weights. Circle No. 271 on Reader Service Card.

Line-Operated pH Meter

Photovolt Corporation has announced its pH meter Model 85, which is suited for pH tests as well as for titrations. Model can be furnished either with individual glass and calomel electrodes, or with probe electrode, combination glass and calomel electrode. Scale is 3 in. long, and is equipped to cover the pH range from 0 to 14. It is said that scale can be read to an accuracy of 0.1 pH unit. Circle No. 270 on Reader Service Card.

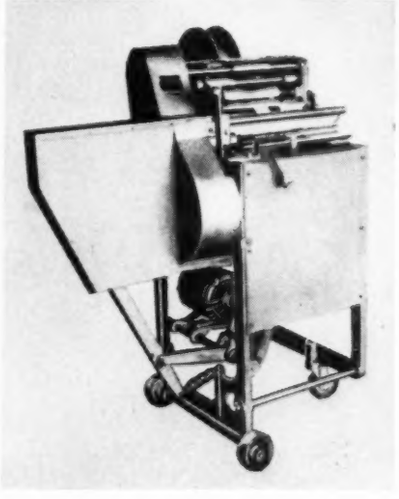


Craftools, Incorporated recently introduced the Shop-Vac dust collector and vacuum, which can also be used for exhausting, blowing, drying and spraying. Unit is equipped with a 2½ in. diam. hose, handle and nozzle and with a 28 gal. fibre drum. It can also be used with standard 1¼ in. diam. vacuum fittings. A built in air regulator controls amount of vacuum and exhaust. Unit is powered by a ball bearing motor which develops ⅞ h.p. Circle No. 269 on Reader Service Card.

Newspaper Roll Wrap Machine

A newspaper single wrapping machine (originating in Australia) is being marketed by L. C. Martin & Assoc., Inc. It is claimed an unskilled operator on the machine can wrap 2000 papers per hr. The newspaper is hand fed into a fork. A trip switch actuates the revolving fork and roll wrapping action. Kraft paper in roll form, varying in width from 1 in. to 4½ in., is automatically fed, cut and pasted around the rolled newspaper. The wrapped paper is **then automatically ejected.**

Other claimed features are: Savings over hand wrapping; machine is mounted on casters; may be rolled into vacant floor space when not in use. Floor space required: 3 ft. 8 in. wide by 2 ft. 2 in. Machine can be used to wrap 250 tabloid size pages or 115 standard size page papers. A single screw adjustment is provided for variation in paper size. The ½ h.p. motor runs nonstop. Circle No. 250 on Reader Service Card.



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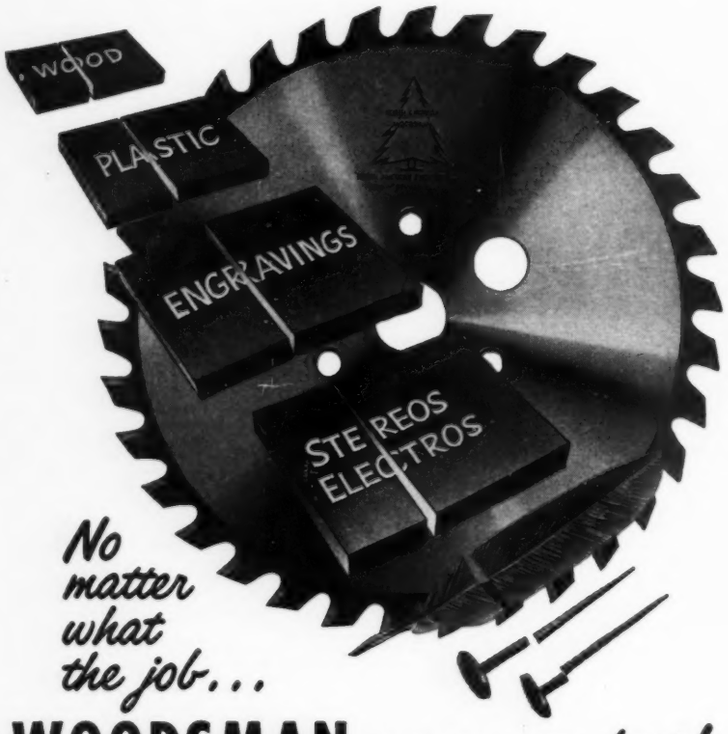


No matter what the job...

WOODSMAN *serves you best!*

Sintered Tungsten-Titanium-Carbide, 91.5 Rockwell A scale hardness, the most wear resistant metal mastered by man, molded and fitted into a precision perfect blade, superfinished by diamond lapping with the original WOODSMAN MAGNI-SHARP process . . . *This is* WOODSMAN . . . the finest carbide tipped blade ever introduced to the graphic arts industry!

Stereotyper, compositor, electrotyper or engraver — no matter what your job — whether you're cutting zinc, copper, plastic or wood, WOODSMAN is your guarantee of performance unmatched. *Write for details, brochure, demonstration.*

NORTH AMERICAN PRODUCTS CORP.

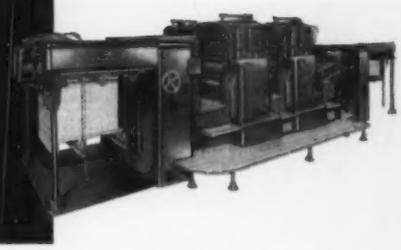
P. O. Box 210 C Edwardsville, Ill.

For More Information Circle 136 on Reader Service Card

For More Information Circle 117 on Reader Service Card→

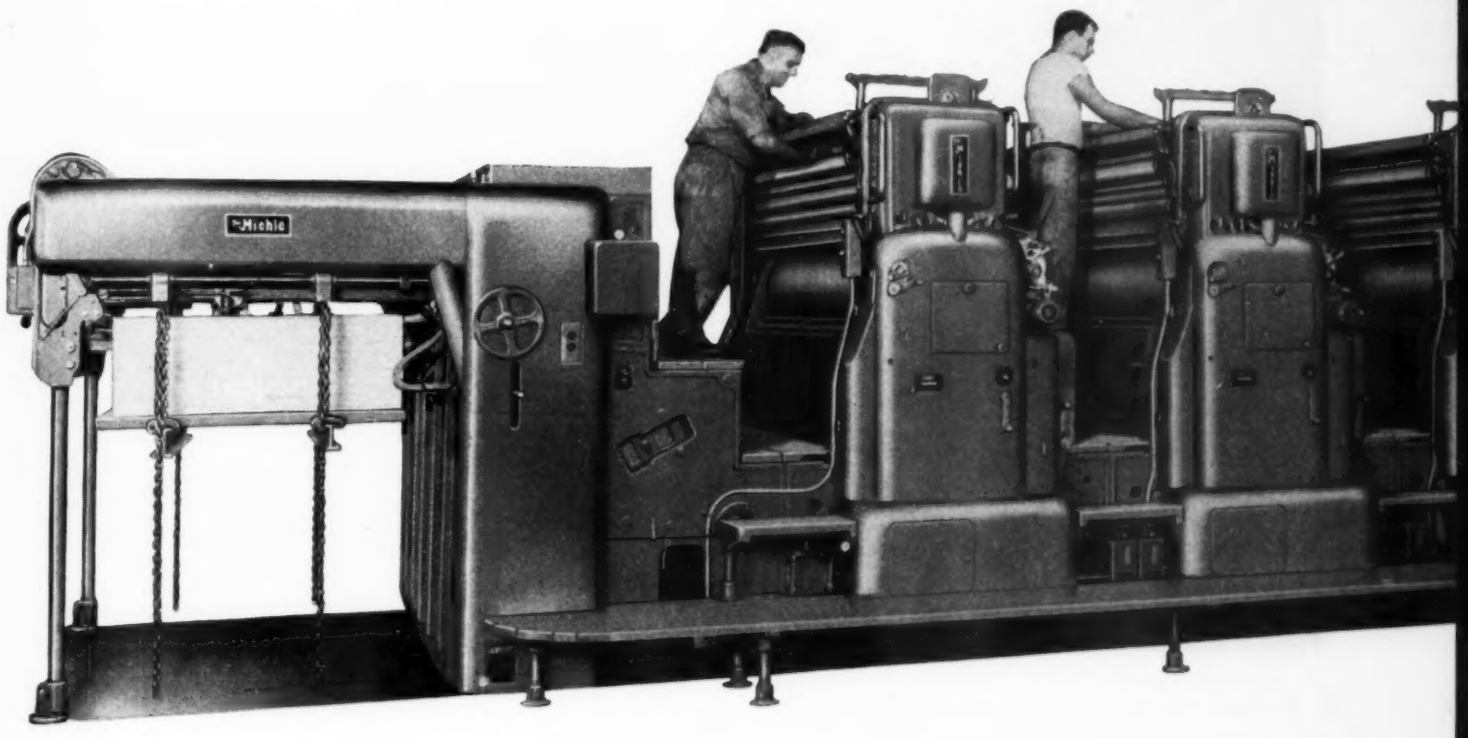
The Miehle

61 AND 76 OFFSETS



Years ahead...

IN DESIGN AND PERFORMANCE TO MAKE THE BIG JOBS MORE PROFITABLE

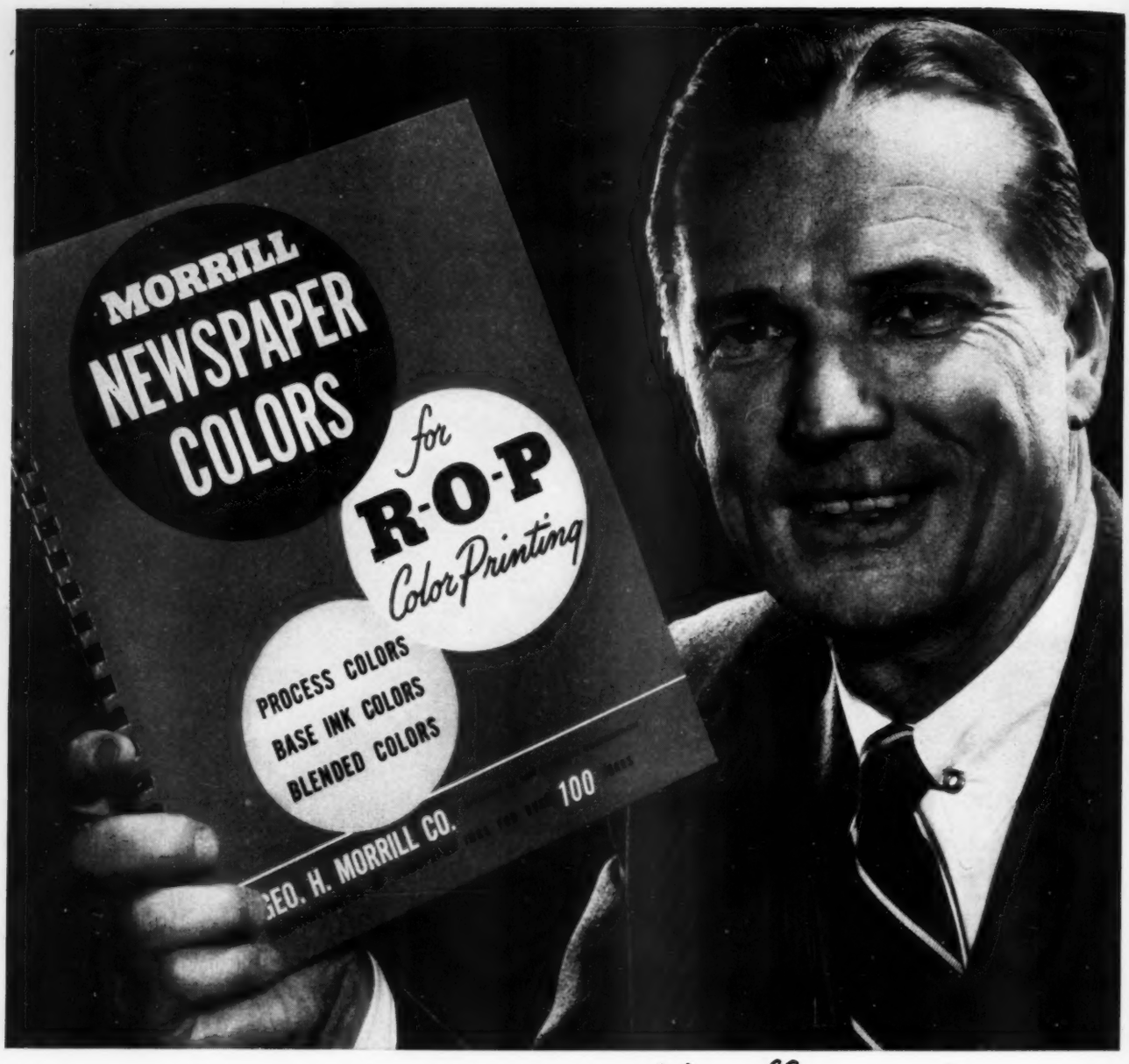


Just a look at the outward appearance of the Miehle 61 and 76 and you'll see that they're modern...years ahead in design. You can see that they're built low with few steps for the pressman to climb...that there's plenty of working space... that all controls and adjustments are within reach—easy to get to. These are the modern points which save pressmen time and trouble and reduce non-productive downtime to the absolute minimum. And there's more—*inside*—that's years ahead. Automatic and sealed-in lubrication, True Rolling Cylinders, swing gripper transfer, unit construction...these are just a few of the years ahead performance features. In the last five years alone more than forty significant improvements have been incorporated into these presses!

Outside and in, the Miehle 61 and 76 Offsets are years ahead in design and performance...to do the best lithographic work...to make the big jobs more profitable.

Write for full details and listing of improvements today.

MIEHLE PRINTING PRESS AND MFG. CO.
Division of Miehle-Goss-Dexter, Inc.
Chicago 8, Illinois



The Man from Morrill

stands for quality and dependability

So whether you need help in solving your R.O.P. color problems, or in selecting the best ink for your pressroom requirements, you can depend on the Man from Morrill. You can call upon Morrill's nation-wide color matching service, and years of experience in making news inks of all kinds with the complete assurance of getting the exact ink you need.

And, whether you buy in drums or tank truck loads (metered to make certain you receive every pound you pay for) Morrill inks are all of the same high quality and uniformity. That's why everyone who buys newspaper ink has a definite reason for having a talk with the Man from Morrill.

A Division of Sun *Chemical Corporation*

Geo. H. Morrill Company

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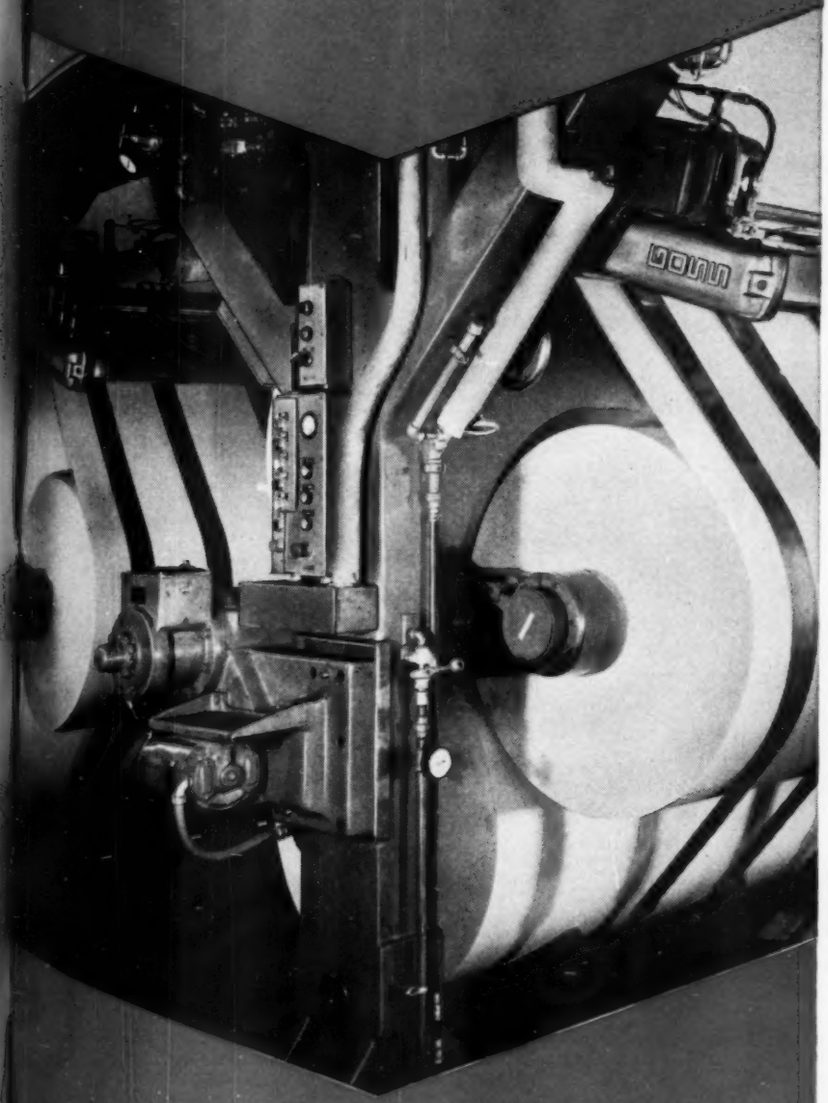
HORN (paints, maintenance and construction materials, industrial coatings) • **WARWICK** (textile and industrial chemicals) • **WARWICK WAX** (refiners of specialty waxes) • **RUTHERFORD** (lithographic equipment) • **SUN SUPPLY** (lithographic supplies) • **GENERAL PRINTING INK** (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • **MORRILL** (news inks) • **ELECTRO-TECHNICAL PRODUCTS** (coatings and plastics) • **PIGMENTS DIVISION** (pigments for paints, plastics, printing inks of all kinds) • **OVERSEAS DIVISION** (export) • **A. C. HORN COMPANY, LIMITED** (Canada) • **GENERAL PRINTING INK CORPORATION OF CANADA, LIMITED** • **FUCHS & LANG de MEXICO, S. A. de C. V.**

For More Information Circle 126 on Reader Service Card

Over 100 units tell the story of the.... GOSS PASTER PILOT



No Buttons to Push...
Just Set it...
And Forget it!

In the short time since the introduction of the Goss Paster Pilot over 100 Units have been installed or ordered. That tells the story of the enthusiastic acceptance by mechanical executives of the *first fully automatic paster system.*

The advantages are obvious. When the Reel-Tension-Paster is equipped with the Paster Pilot the operator has only to prepare the new roll with glue and paster tabs.

The Goss Paster Pilot does the rest. The new roll is indexed to pasting position, the brush and web severing carriage is lowered, the pre-drive takes over and the paster is completed—all automatically—at speeds up to 60,000 papers per hour.

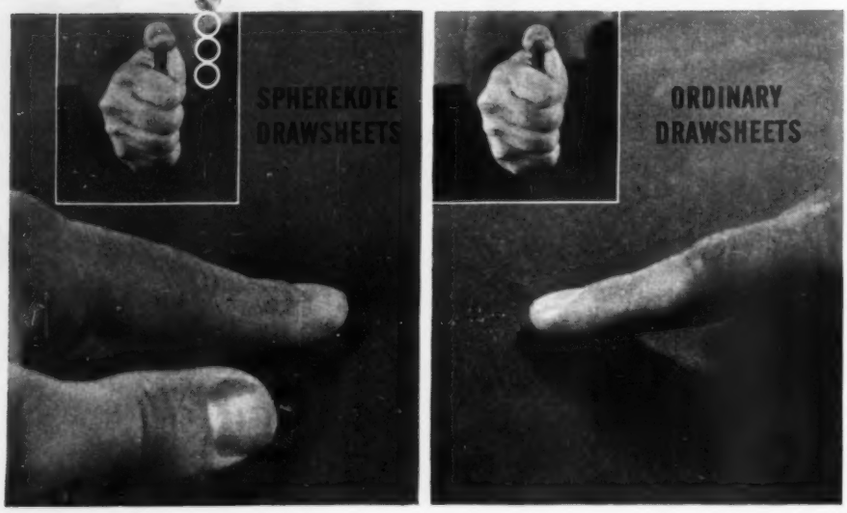
The Paster Pilot means higher production, fewer human errors and increased efficiency. It conserves newsprint by "sensing" press speeds and automatically pre-setting the time for the proper pasting cycle, resulting in uniform cores with 3/16" or less of paper on the core.

Paster Pilots are being installed both on new presses and to increase the efficiency of many of the more than 500 Goss Reels-Tensions-Pasters now in operation.

THE GOSS PRINTING PRESS COMPANY
Division of Miehle-Goss-Dexter, Inc.
5601 WEST 31st STREET, CHICAGO 50, ILL.

For More Information Circle 72 on Reader Service Card

Glass armored drawsheets resist leader marks!



Resilient Spherekote® Drawsheets "Recover"–Assuring Long Life, Finer Halftone Reproduction

Put SPHEREKOTE Drawsheets and Blankets to the test. Prove to yourself by the rugged test shown above how SPHEREKOTE Drawsheets effectively resist leader marks.

Millions of tiny, super-hard glass beads are fused to an extremely tough rubber base. The result is a resiliency and uniformity that gives you long press life and holds press downtime for maintenance to a bare minimum.

The glass armored surface pays in other ways too. It provides the perfect surface for sharper, cleaner reproduction in R.O.P. color as well as black and white. And, it has little affinity for ink. First impression offset is sharply reduced assuring substantial savings *immediately*.

Depend on SPHEREKOTE Drawsheets and Blankets for finer work at a savings in time and money. For a *free* SPHEREKOTE Drawsheet and Blanket demonstration, or information, write: Minnesota Mining and Manufacturing Co., Dept. FM-107, St. Paul 6, Minn.

REG. U. S. PAT. OFF.
SPHEREKOTE BRAND
DRAWSHEETS AND BLANKETS
PRODUCT OF 3M COMPANY RESEARCH

Made in U.S.A. by Minnesota Mining and Manufacturing Co., St. Paul 6, Minn. General Export: 99 Park Ave., New York 16, N.Y. In Canada: P.O. Box 757, London, Ontario.

For More Information Circle 120 on Reader Service Card

Equipment and Supplies

(Continued from Page 26)

Tri-Power Printing Lamp

A printing lamp designed to operate from standard 3 ph. supply service has been developed by the Strong Electric Corp. Known as the Grafarc Tri-Power, the lamp is equipped to turn a 2½ hr. trim of

three 9 mm. by 12 in. copper coated White Flame carbons, so positioned as to produce a single light source from the arc formed at their ends. This single light source is said to reduce any tendency for dot undercutting. Lamp is powered for even distribution of electrical loading throughout the three phases of electrical system. Metal reflector is said to enable utmost light uniformity and intense illumination is provided for printing frames of 50 in. by 70 in. and larger. Circle No. 260 on Reader Service Card.

Water-Saving Condensers

Two condensers said to beat water supply problems in larger air conditioning and refrigeration systems have been developed by Carrier Corporation, it was announced by Charles V. Fenn, vice president, Machinery and Systems Div. The models are made to use evaporation of water or passage of air over condensing coils to remove heat from refrigerant. One is an evaporative condenser, available in 13 sizes from 5 T. to 250 T. capacity. It employs vaporized water drawing heat from a method of wetting coils with the refrigerating system. Other model is an air cooled condenser produced in seven sizes from 2 T. to 38 T. capacity. Unit is used to dissipate heat from the refrigerant directly to the air, requiring no water at all. Circle No. 262 on Reader Service Card.

3-in-1 Combination Gauge

The Bacher three-way combination gauge is being distributed by Pittsburgh White Metal Co., Inc. The gauge can be used for measuring type, plates, electros, wood blocks, stereo mats, rubber and plastic

(*Continued on Page* 32)

time for a seasonal change to

WINTER-TYPE RAPID COMPOSITION ROLLERS

Winterize your presses now with winter-type RAPID COMPOSITION ROLLERS — and you won't have to worry about an early cold wave. Be sure to order RAPID Rollers — the pressman's favorite for more than a generation — and constantly improved, so that today they remain the last word in Composition Rollers.

RAPID ROLLER CO.

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For More Information Circle 148 on Reader Service Card

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newspaper
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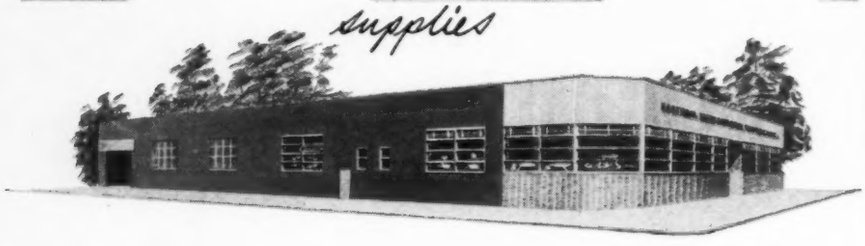

Eastern is geared for speedy service . . . without sacrificing accuracy in processing your orders.

That's because we carry over five-hundred items for your composing rooms, stereotype department, press room and photo-engraving department . . . and we have the skilled, enthusiastic staff to give your orders immediate, personal attention.

That's why 8 out of ten dailies . . . and a vast number of weeklies . . . do business with Eastern. We hope you will too, real soon!

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For More Information Circle 55 on Reader Service Card

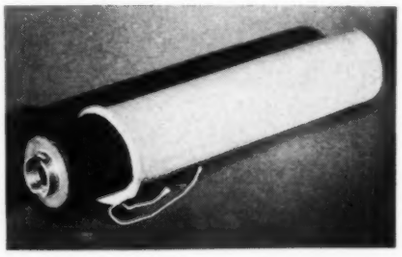
Equipment and Supplies

(Continued from Page 30)

plates. In addition, sponsor states, it can be used to measure body thickness of type, and paper of any thickness down to onion skin. The dial is calibrated in 0.001 in., and measurements are guaranteed accurate to 0.001 in.; weight of instrument, 7 lbs. Steel block (0.918 in.) to zero the dial furnished. Circle No. 266 on Reader Service Card.

Dis-Base Water Roller

The Van Son Holland Ink Corp. announces introduction of a permanently soft water form roller called Dis-Base. Molleton is not required on the roller, it is stated. Made of extra soft rubber, it is also said, the roller



will add greatly to plate life, while extra length keeps the sides of the plates clean. Ball bearing construction cuts friction and drag to a minimum. The disposable cover can be changed quickly. The rollers are presently available for duplicating size presses only. Circle No. 272 on Reader Service Card.

Offset Plates from Type

Duplicate master plates for use on the 1250 Multilith press can be made directly from type pages with type, line cuts or halftones, according to Challenge Machinery Co. The placing of the printing image on the plate involves use of a standard proof press, such as is manufactured by Challenge.

From information supplied by Addressograph-Multigraph Co., Challenge has applied the method to the printing of price pages, instruction sheets and like material. Multilith M-36 black water repellant ink and a Challenge GP model press have been used for the purpose. The masters can be dried overnight, or in 10 min. by means of an infrared lamp. Any standard paper master or a metal plate can be used. Circle No. 254 on Reader Service Card.

Mid-Century Face

Mid-Century, a modern sans-serif face said to be adaptable for manual, catalog, and listing composition, has been added to the family of type faces of the Friden Justowriter automatic tape operated composing machine. This brings the number of type faces available on Justowriter Reproducer to 14. Circle No. 261 on Reader Service Card.

(*Continued on Page* 36)

Why you can benefit with
MAGNESIUM PLATES

Magnesium is becoming increasingly popular in the graphic arts field. Here are the advantages engravers and printers alike are now enjoying with magnesium photoengraver's metal.

rapid etching. Acid baths do their job much faster on magnesium, and less acid is required. This means more plates, faster, with deeper etching and more positive control. These outstanding characteristics are even more advantageous when magnesium is used with the Dow Etch Process, a method for producing shoulderless engravings that cuts engraving time and greatly increases quality.

uniform gauge. Magnesium plate is made to precision tolerances to assure uniform flatness and thickness. This makes possible maximum accuracy in engraving and minimum make-ready time on the press.

dimensional stability. An unusually stable metal, magnesium will not shrink or stretch during processing.

hardness and strength. Magnesium is one of the toughest and most durable metals used in the graphic arts field. It retains a good image under long and severe conditions of use. Runs of one and two million from the same magnesium plate are not uncommon.

fine grain. The size of magnesium grain is less than 0.001". This small grain size means magnesium has superior structural strength and is highly resistant to distortion.

light weight. Weighing only 1/5 as much as copper, 1/4 as much as zinc and steel, magnesium is easier to handle, both on and off the press. As a result, higher press speeds can be attained with magnesium printing plates.

color. Because of its rigidity and superior dimensional stability, magnesium is excellent for register in color work and permits substantial savings in color plate costs.

machinability. Heavier depths of cut can be made with greater speed. Magnesium is easier to saw, route and bevel than any other metal.

re-etching. Magnesium can be readily re-etched by slightly modified procedures.

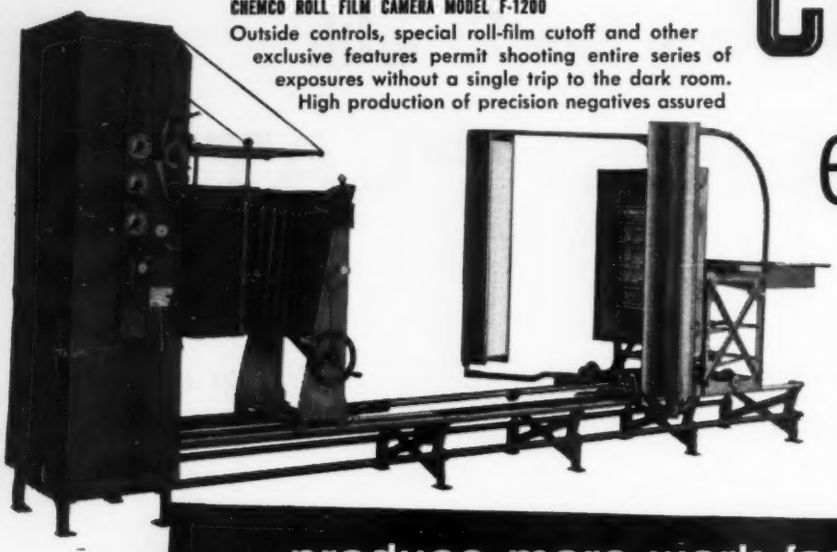
Contact your local metal supplier for magnesium photoengraver's metal or write to us for more information. THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. MA 1421BB.

YOU CAN DEPEND ON DOW

For More Information Circle 51 on Reader Service Card

Keep up to date with chemco equipment

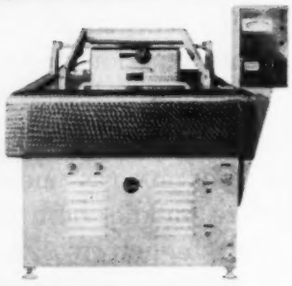
CHEMCO ROLL FILM CAMERA MODEL F-1200
Outside controls, special roll-film cutoff and other exclusive features permit shooting entire series of exposures without a single trip to the dark room. High production of precision negatives assured

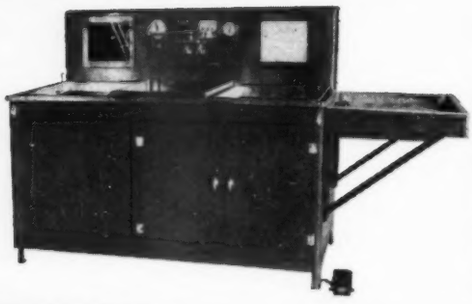


if it's chemco *it's best for platemaking*

produce more work faster and better

DOW CHEMCO FAST ETCH MACHINE MODEL 507
For powderless etching of halftone, line and combination flats — up to 24 x 26. Variable paddle speed; forced circulation system; refrigeration system; automatic cutoff — standard equipment.



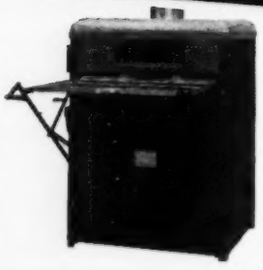


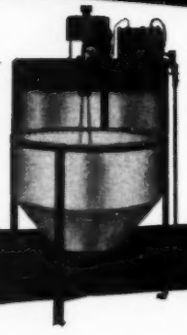
CHEMCO CONTROLLED TEMPERATURE DARK ROOM SINK MODEL 910
Running water refrigeration; water cooled compressor; safelight viewing light — corrosion proof construction throughout. Shown with Model 920 Auxiliary Sink Pan, optional equipment. Fits any sink.

meet strictest production requirements

CHEMCO BURNING-IN OVEN MODEL 310
Provides perfectly regulated heat, easy operation, fast, even burning-in plus instant cooling. Plate rides smoothly on oscillating carriage.

Model 314 Burning-In Oven is recommended for hardening tops prior to powderless etching.





CHEMCO AUTOMATIC GAS-ELECTRIC PLATE WHIRLER MODEL 1300
Uniform sensitizing with hot or cold tops in a two-minute cycle. Dial one of 9 speeds, the Whirler does the rest!

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To improve quality, simplify purchasing and speed production . . . make Chemco your headquarters for all platemaking equipment and supplies. For fast action and top-quality, full line selectivity, call your Chemco representative today!

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ATLANTA BOSTON CHICAGO DALLAS DETROIT NEW ORLEANS NEW YORK

For More Information Circle 40 on Reader Service Card

IMPERIAL presents an amazing ENGRAVING TEAM

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Vitaplate, the highest quality zinc ever to be etched, teams up with VitasolV*, a most amazing new etchant, to produce one-bite powderless etching with unbelievable qualities and speed—the greatest improvement in engraving since film negatives were introduced.

One practically odorless bath in one machine etches halftones, line cuts and combinations in record time. Powdering is out. Cold top can be used. Miracle VitasolV stops out any screen on any flat at the proper depth, and etches from 5½ thousandths to 45 thousandths. No shoulders. Superior depth in small type. No perceptible lateral etch nor loss of image.

Vitaplate is priced slightly more than zinc and can be etched with VitasolV or in conventional manner. It finishes well, can be re-etched, soldered, patched, stored without corrosion and with all has unusual durability—ideal for heavy duty work. Vitaplate and VitasolV is the new answer to rising costs in your plant.

Write, Wire or Phone today for complete details.

NOTE If you are attending the photoengravers convention you are invited to see a Vitaplate-VitasolV demonstration at our Philadelphia plant October 14th.

These plants are users of Vitaplate and VitasolV

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Star-Tribune
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Courier Press
Evansville, Indiana
New Orleans Electrotype & Engraving
New Orleans, Louisiana
Bureau of Engraving
Minneapolis, Minnesota
Southright Corporation
Kansas City, Kansas
Rockford Illustrated
Rockford, Illinois
Baker Color Plate
Houston, Texas
Express Publishing Company
San Antonio, Texas
Caller Times
Corpus Christi, Texas
Topeka Engraving
Topeka, Kansas
I B M
Greencastle, Indiana
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The Baltimore Sun
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Huntington, West Virginia
Ad Service Engraving Co., Inc.
Rochester, New York
Times Publishing Company
St. Petersburg, Florida
Washington Post and Times-Herald
Washington, D. C.
Miller and Miller
Atlanta, Georgia
Thomas Rehan
Hicksville, L. I., New York
Providence Journal Co., Inc.
Providence, Rhode Island
Jones Photo Engraving Company
Uniontown, Pennsylvania
The Item Publishers
Yonkers, New York
Blanks Engraving
Dallas, Texas
Columbus Dispatch
Columbus, Ohio
†Vitaplate only
List complete as of Sept. 15

Imperial

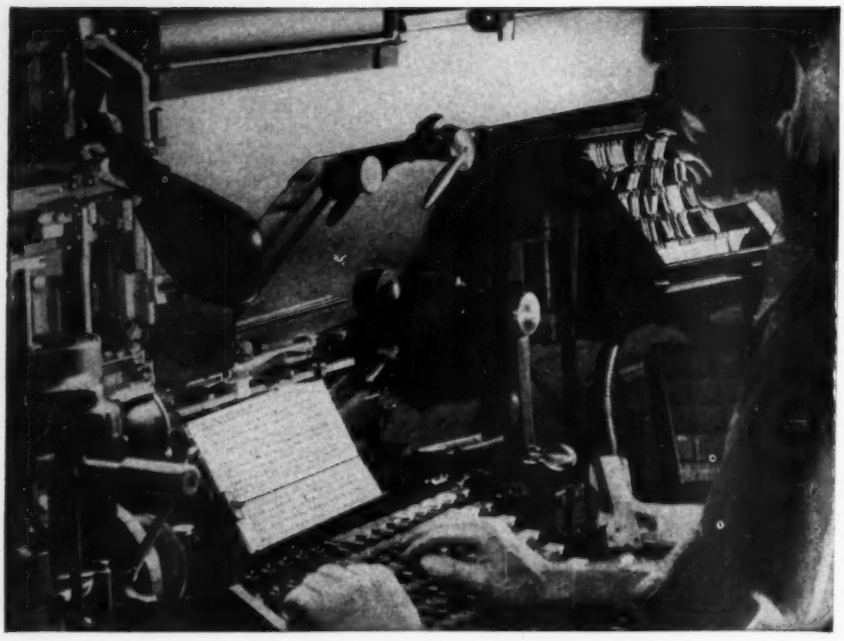
IMPERIAL TYPE METAL COMPANY
CHICAGO 50 · NEW YORK 7 · PHILADELPHIA 34

REGULAR
DURAPLATE
VITAPLATE

* The use of VitasolV comes within the limits of the Dow Patents.
This advertisement printed from Vitaplate engravings.

For More Information Circle 93 on Reader Service Card

How to minimize dross, cut losses, save money on type metals



When you buy type metals, look first for the "Castomatic"® trademark. Castomatic type metals, cast automatically under pressure in sealed machines, are free of dross-producing oxides, help you keep dross losses to an absolute minimum.

With Castomatic metal, and maintenance of the proper lead-tin-antimony balance with Federated Mor-Tin®, you will generate the absolute minimum of dross. Replace your dross, pound for pound at modest cost, with Mor-Tin and maintain both quantity and quality of your service metal.

Send for the interesting booklet, "How to Save Money on Type Metals"... and if a Federated Service Man can be of help to you in solving any type metal problems, just get in touch with your nearest Federated office, or write or call:

Federated Metals

ASARCO

Division of

AMERICAN SMELTING AND REFINING COMPANY

120 Broadway • New York 5, N.Y.

In Canada: Federated Metals Canada, Ltd., Toronto and Montreal

For More Information Circle 60 on Reader Service Card

Equipment and Supplies

(Continued from Page 32)

Dual-Drive System

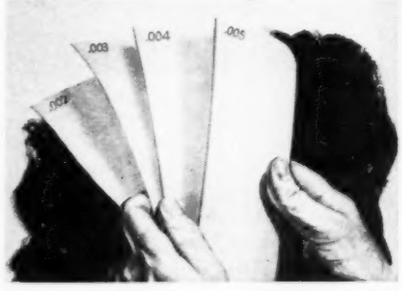
Robertson Photo-mechanix, Inc. has announced its Dual-Drive manual cable and electric screw drive system for cameras. System enables immediate selection of desired drive, screw drive for color or ultra-precision work and cable drive for high volume production. Screw driven cameras are equipped with vernier re-registration accurate to readings of 0.001 in. Dual-Drive is available as accessory equipment for the Comet and Tri-Color cameras. Circle No. 252 on Reader Service Card.

Magenta Contact Screen

Kodak Magenta contact screens for photoengraving are now available in 85 and 100 rulings, according to Eastman Kodak Co. The rulings will be supplied in sizes 8 in. by 10 in. through 24 in. by 24 in. Circle No. 258 on Reader Card.

Offset Packing Paper

Riegel Paper Corp. has announced its offset packing paper, manufactured to accurate caliper instead of ream weight. Paper is made with a toothy surface, said to prevent slipping or creeping under plates or blankets. It is available in rolls from 37 in. to 57 in. and in five sheet sizes. Four calipers, from 0.002 in. to 0.005 in., can be obtained. Circle No. 257 on Reader Service Card.



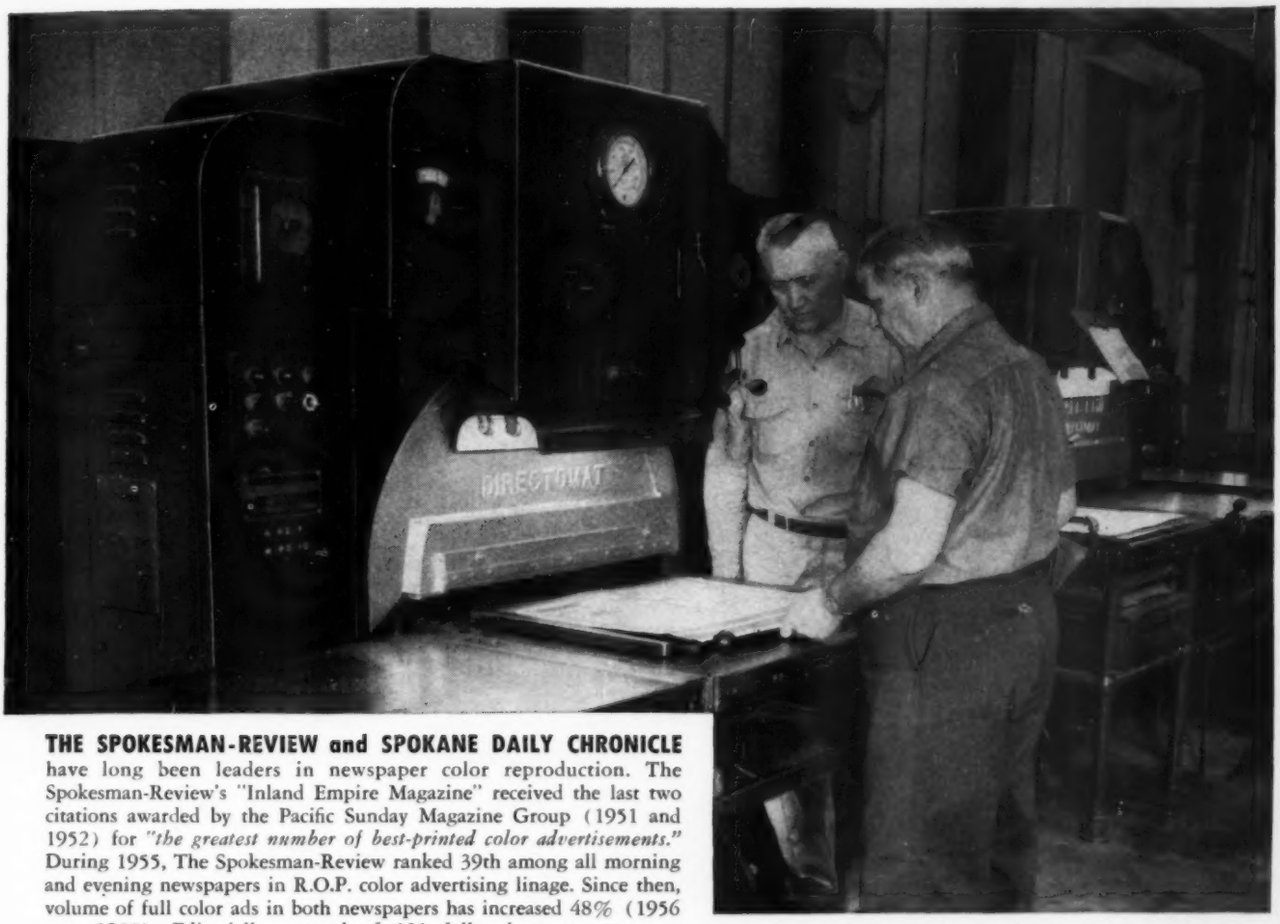
ATF To Loan Slides

The construction, maintenance and operation of a 24 in. offset press may be studied by means of a set of 35 mm. black-and-white and color transparency slides available on loan from American Type Founders Co., Inc. The 75 slides, which can be projected on a screen by any standard 35 mm. slide projector, illustrate in detail the various operating features of the ATF Chief 24, Model 1200. A script briefly explains the press's operation. Slides are available for use by apprentice training groups, Graphic Arts schools, Craftsmen, Litho Clubs and other trade groups. Requests for loan dates should be sent to American Type Founders Co., Inc., 200 Elmora Ave., Elizabeth, N. J.

"Directomat: essential FOR COLOR EXCELLENCE"

says **WILLIAM W. FYFE** *of* **THE SPOKESMAN-REVIEW AND SPOKANE DAILY CHRONICLE**

"The Spokesman-Review and Spokane Daily Chronicle have just completed the installation of one of the most completely equipped, ultra-modern newspaper plants in the nation — particularly in respect to R.O.P. color reproduction. There were, however, certain pieces of equipment that did not need to be replaced. Among these were our two Lake Erie Directomats. We are completely satisfied with the operation of these two presses and feel that without them our reproduction of full color would suffer materially."



Directomat units at The Spokesman-Review and Spokane Daily Chronicle, Spokane, Washington. First unit was installed 1941; second unit, 1951.

THE SPOKESMAN-REVIEW and SPOKANE DAILY CHRONICLE have long been leaders in newspaper color reproduction. The Spokesman-Review's "Inland Empire Magazine" received the last two citations awarded by the Pacific Sunday Magazine Group (1951 and 1952) for *"the greatest number of best-printed color advertisements."* During 1955, The Spokesman-Review ranked 39th among all morning and evening newspapers in R.O.P. color advertising linage. Since then, volume of full color ads in both newspapers has increased 48% (1956 over 1955). Editorially, a total of 121 full color cuts were run during 1956.

THE SPOKANE MARKET IS 4 TIMES AS BIG AS IT LOOKS!			
	Population	Families	Coverage
Spokane Market	1,108,200	344,000	5 out of 10 families
Metropolitan Area	267,800	87,500	10 out of 10 families

Send for Directomat Bulletin 349

LAKE ERIE HYDRAULIC PRESSES

LAKE ERIE MACHINERY CORPORATION, successor to

LAKE ERIE ENGINEERING CORPORATION

568 Woodward Avenue, Buffalo 17, New York

DISTRICT OFFICES IN NEW YORK, CHICAGO, DETROIT

Manufacturers of the Most Complete Line of Hydraulic Presses for All Industry

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For More Information Circle 100 on Reader Service Card

THE KEY TO SUCCESSFUL MATRIX PROCESSING

Matrix Contrast Service is based on highly skilled technicians and service crews, backed by 30 years of experience in this specialized field. The techniques employed by these Matrix servicemen have been perfected over the last three decades until today they are virtually foolproof.

This superior service is rendered on a continuous maintenance basis that includes both the original processing of your new and used matrices, and reprocessing according to pre-arranged schedules. We maintain round the clock shifts to assure that your production schedules will not be interrupted.

If you haven't already investigated the savings obtainable through the use of Matrix Contrast black-and-white and colored reference marks, send today for a free booklet describing our time-tested matrix maintenance plan.

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326 W. Madison Street, Chicago 6, Ill.
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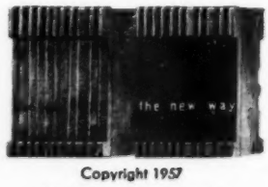

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Matrix Contrast Corporation

For More Information Circle 114 on Reader Service Card

PRINTING EQUIPMENT *Engineer*
October 1957

Research—

What it is, why it is needed and how smaller companies may participate in helping maintain bulwark against obsolescence and excessive costs

By J. HOMER WINKLER*

**Technical Advisor, Battelle Memorial Institute, Columbus, O. Abstracted from address delivered before Packaging Research Clinic, American Management Assoc., June 1957, New York, N. Y.*

Industrial organizations or companies invest funds in research to insure present markets and to provide opportunity for healthy growth. Markets can be lost to competitive products or services. Obsolescence and excessive costs are ever present threats. Waste, makeovers, and spoilage exact their toll. Companies need many management and technical services to protect their markets and to keep their product sales up.

Company growth is made possible by increased sales of products and services. Also, increased sales may be recorded by adding to the number of products or services customarily being sold by a company. But careful analyses of the company operations and potential markets are needed before a program of diversification can be determined.

The Age of Research

Research is a word having many different meanings to many different people. We are concerned with industrial research as applied to packaging operations. It is surprising to most people to learn that research is not only one of the younger industrial functions, but that as a fully recognized procedure for corporate progress, it is just over fifteen years old.

In 1929, expenditures for research in this country amounted to only $160 million. Research expenditures actually accounted for only 0.15% of our gross national product. Last year, in contrast, total research expenditures amounted to $5 billion or about 1.25% of our gross national product. Research is growing at a rate of 10% to 12% a year as compared with a 3% increase in the gross national product.

To hasten the flow of technology from laboratory to living room, some 3000 U. S. companies today have their own research facilities, employ 500,000 research workers, including 100,000 scientists. Across the U. S., new research plants are springing up almost as fast as factories.

An Industry In Itself

From the stepchild of industry, scientific experimentation has become an industry in itself—perhaps the key industry. By constantly creating new products, and thus new markets, research has added a dynamic new force to the economy to help keep the boom rolling. Once industries competed for a market that seemed clearly

EDITOR'S NOTE:

Winkler's address under the title, Contract Research for Packaging, *was prepared especially for the American Management Assoc.'s Packaging Research Clinic. On account of editorial space limitations, the complete address cannot be published here. We feel, however, that the main part of its context will be of great interest to Graphic Arts plant executives as a whole.*

limited by consumers' needs, and the basic needs varied little from decade to decade. Periodically, the needs were so nearly filled that the market and industrial activity declined. In the age of research, industries compete constantly to create new needs, expand their markets, and increase production.

Obviously, the present growth of research cannot continue indefinitely. Sooner or later a point of diminishing returns will be reached. But it is equally obvious that research has a long way to go before it approaches this point.

It is known that some industries can support research activities up to one-eighth the amount of net sales. The average for all industries is 2%.

So, research as we know it today, is really a new force of significance in our industrial economy, and in considering its effect on the future, we must keep this fact in mind. We cannot predict future rates of economic change by rates of change that have occurred in the past. And, because research is such a potent force, old traditional economic patterns and cycles should be regarded with suspicion. We are still awaiting the arrival of the business depression that was supposed to come shortly after the end of World War II. New products and new industries arising from research, probably more so than expenditures for defense and the Korean War, prevented its materialization.

Research Being Democratized

Research is being made a more precise instrumentality for accomplishing a job—for helping industry solve its technical and competitive problems. It is also being democratized—being made available to more companies. There are some 3000 industrial research laboratories in the United States today. An enormous segment of most industries is just starting research.

Industry executives, who once minimized outlays for science because they were hard to justify to stockholders, play up research budgets as a powerful magnet for new capital. One of the reasons for this is that securities analysts and bankers have come to regard a company's research program as one of the most significant yardsticks of its future growth and ability to keep up with, or outdistance, competition.

Task-force Introduced

The research task-force approach has been introduced. One big effect of this has been to eliminate the rigid boundaries that once separated one science from another. Oilmen are experimenting with radiation. The electrical industry has unearthed new chemicals, *e.g.,* silicones, used in products ranging from synthetic rubber to children's "silly putty."

Now, all modern laboratories use teams of scientists in attacking problems, and such teams can accomplish in six months or a year what would take a lifetime of individual effort. Small companies cannot provide the manpower and equipment for effective team research. Unless a company has a capitalization of at least $1 million and gross annual sales of $5 million, it cannot support much in the way of a research laboratory, although it may have an excellent control and testing laboratory.

Small Companies Participate

But the situation is not hopeless, and more small companies are now actually engaged in scientific research than ever before. They accomplish this seemingly paradoxical feat by contracting with large central laboratories for research on their problems. They buy research services, just as they buy advertising or printing, and in so doing, are spared all the capitalization costs of a large well-staffed laboratory. In effect, they put all or nearly all of their budget for research into its prosecution *per se,* thereby increasing the rate of their progress while at the same time avoiding heavy outlays for equipment and the maintenance of a staff. Even in industries accustomed to research, the utilization of contract research is becoming an accepted procedure. There is a great need on the part of small companies for adequate and competent contract research facilities.

Contract Research

Despite the task force approach, research is not a monopoly of the big companies. Many small companies that cannot afford full-scale research programs of their own can hire top outside brains to solve their scientific problems.

There are three types of organizations that provide contract research services. These are: Commercial laboratories, independent nonprofit research institutes, and research foundations associated with universities. The regular graduate schools of universities also conduct much research for industry on a fellowship basis, although the emphasis is usually on the training of research personnel rather than on solving immediate problems of great industrial significance.

The laboratories of large corporations sometimes contract to handle research problems of noncompetitive companies, and when this is done, the corporation laboratory is actually acting as a commercial research laboratory.

There are a great many consulting and commercial laboratories serving industry. Most have specialized fields, and the emphasis is on consultation and testing rather than research. A few of the larger ones, however, conduct investigations in diversified fields of applied science.

Nonprofit Research

The nonprofit research institutes, although fewer in number, have reached a higher development in providing a general research service to industry. These organizations cover all fields of industrial science and conduct research for industry. Research is conducted in confidence, and all results accrue to the company contracting for the work. In effect, then, these research institutes are the resource laboratories of each of the thousands of companies they serve—providing research at cost to the company. They serve both small and large companies alike and, in addition, handle much of the con-

(*Continued on page* 82)

Busy Year For Hoe—The activity on the erecting floor at R. Hoe & Co., Inc., printing equipment and machinery manufacturer, is the result of only part of the record new business total announced earlier this year by the company. Pictured are presses for the Pittsburgh (Pa.) *Press,* Bellingham (Wash.) *Herald,* Miami (Fla.) *Daily News,* Rock Island (Ill.) *Argus* and the Watchtower Bible and Tract Society, Brooklyn, N. Y. Also shown are several sub-assemblies and sections for color convertible presses and an offset metal decorating press.

Letterpress Hand Makeready Indicted in Survey Report

The need for abolishment of hand cut makeready overlays in the letterpress printing process was brought to the attention of American printers last month in a report on makeready techniques issued by Minnesota Mining & Mfg. Co. The report, based on a nationwide survey of letterpress makeready, mainly concludes that spotting-up practices are unstandardized as to method, degree of quality, and time taken to complete the spotup. Also, there seems to be little or no correlation between a man's length of experience and his ability or speed in making ready.

The 3M technicians and research men who studied the results of the survey, said hand cut overlays will vary in technique and application in every shop. There is almost no standardized procedure in practice. "Top quality printing," they added, "means different things to virtually every craftsman. There is no clear definition to what top quality printing is."

The Makeready Market

It is difficult to estimate with accuracy, they continued, how long a given hand makeready will take. There is no correlation between years of experience and ability to estimate makeready time. "The makeready market is mainly composed of older men with lengthy experience plying their craft much the same as they have for years," the 3M people said.

They also concluded: "There is a complete lack of uniformity of procedure used in making hand cut overlays. The work involved in hand makeready is extensive, costly and complicated. Almost no one in the industry can accurately answer the question, "How long does it take to makeready by hand?"

Details of the Test

Edward J. Kane, general manager, 3M's Printing Products division, stated that the survey was conducted under conditions which were controlled as closely as possible. First, a mixed form 11 in. by 13 in. was assembled consisting of used electros, a new zinc solid, Monotype heads, and Linotype body copy. Without correcting any portions by underlaying or interlaying, 13 practically identical electros were made, with special effort toward uniformity. All were made from the identical original. The electros were mounted on magnesium base to prevent any changes from humidity.

The electros were sent to 3M representatives in different cities. The men were asked to contact reputable letterpress firms and ask them to run a job using the test electro. Shops employing 3M brand makeready were not used in any instance.

First, the pressroom foreman made an estimate of how long it would take to cut and hang the overlay to run the form for "a very high quality job." It was specified that the estimated time was to be figured from lockup of the form to "OK-to-run." It was also specified that an experienced pressman was to run the job. The press could be any press larger than a Miehle V-50. The 3M representative was present during the entire run and he timed the pressman to ascertain what the actual time was for making and hanging the overlay. The run consisted of 500 copies.

Time studies showed a 4 hr., 12 min. variation between the least time taken (28 min.) and the most time taken (4 hrs., 40 min.) to makeready the 11 in. by 14 in. form.

Statistical Averages

Some of the averages, from a statistical standpoint, which came out of the 3M study of makeready are as follows: Average experience of the foreman estimating the makeready time was 33.42 years. Average experience of the pressman who ran the jobs was 26.58 years. Average price paid for printing the jobs was $70.83. (Prices varied from a low of $25.48 to a high of $137.00.) Average estimated makeready time was 1 hr., 47 min. Average actual makeready time was 1 hr., 56 min.

Six pressmen made ready faster than their foreman estimated and five made ready slower than the estimate, while two met the estimated makeready time in doing the job. The thickest hand overlay used was built up as much as 0.010 in.

The technicians of 3M's printing laboratory thought the jobs varied in quality from good to excellent. The 28 min. job was "surprisingly good;" the 4 hr., 40 min. job "still left a hard edge on one portion of the print." Where shorter makeready times were taken, the group reported pressmen showed some tendency to compensate with heavier ink settings. In addition to too much ink, types of defects detected included too little ink, underimpression, overimpression, broken solids, broken halftones, muddy highlights or middletones, and hard edges.

Reason for the Survey

General Mgr. Kane said the reason for the survey was to provide evidence that letterpress makeready is completely unstandardized and unpredictable. He said the most significant thing in the survey is the variation in quality but considered "top quality" by the printer doing the job.

Kane related: "One pressman told us he hadn't made a hand makeready for 33 years, and he didn't like this one. Others hadn't made a hand makeready in 15 years or more. Yet, when we asked for a 'top quality job' they went to hand makeready. This indicates that some printers haven't

(*Continued on page* 80)

"Every day it's the same old deal,—work and turn, work and turn!"

Light Optics Images and the *Printer*

By B. R. HALPERN*

****Photomechanical consultant to the Graphic Arts. Based on a lecture presented to the ITCA Workshop Session held in Philadelphia, January 1957.***

PART I

Light is as indispensable to the printer as are paper and ink. Without it, the printed job cannot be prepared or be seen. With its aid, printing has advanced a long way from being a purely mechanical process of duplication. Light is now a useful element in preparing typographic composition as well as printing forms. The use of light as a printing material is photomechanical in its application. Accordingly, an understanding of what light is, how to control it, and what it can do, is essential to improving the quality and productivity of printing.

Light is all around us as is the air we breathe. Like the air we are inclined to ignore it until it becomes uncomfortable to us. To our perception, light can be bright, dim, or absent. For our seeing, it may be inadequate, comfortable, or irritating. When displayed in colors it can arouse pleasant or distracting emotions. Light does all these things, because *light is energy*. As energy, we can put light to work. One of the important properties of light to us in the Graphic Arts is its ability to change the structure or behavior of materials. These changes may be visible and result in physical or chemical alterations. Or they may be latent and invisible and require later treatment to develop out their imprint.

Many organic substances are altered by exposure to light. Sunburn or sun tan is a common example. In a similar way many colloids such as albumen, casein, gum, and glue, when combined with a light-sensitive chemical such as ammonium dichromate, will change their composition upon exposure to light. The most important change to the printer is that water-soluble colloids will become insoluble in water. By coating the intended printing plate with such a light-sensitive solution, then selectively exposing it to light, and washing the surface with water, only the areas that were exposed to light will remain attached to the plate. These areas can act as a resist for etching the metal plate with an acid, as is done in photoengraving. Or the coated surface can be treated to make it receptive to a greasy ink. This is the basis of surface plates made by photolithography. The exposed area can also act as a protective stencil for further chemical treatment. The stencil will then confine the chemical action to the bared areas of the metal plate. The stencil method is used when exposing through positives in making deep-etch plates for lithography. With modifications it also serves a similar purpose in photogravure work.

In photography the action of light produces an invisible latent image in a photographic material. Light works much faster in this way than when it is used to make a dichromated colloid insoluble. The latent image on a film can be described as a distributed electrical charge. This charge is built up locally in proportion to the relative light intensity that reaches different parts of the image. These local charges will later trigger a

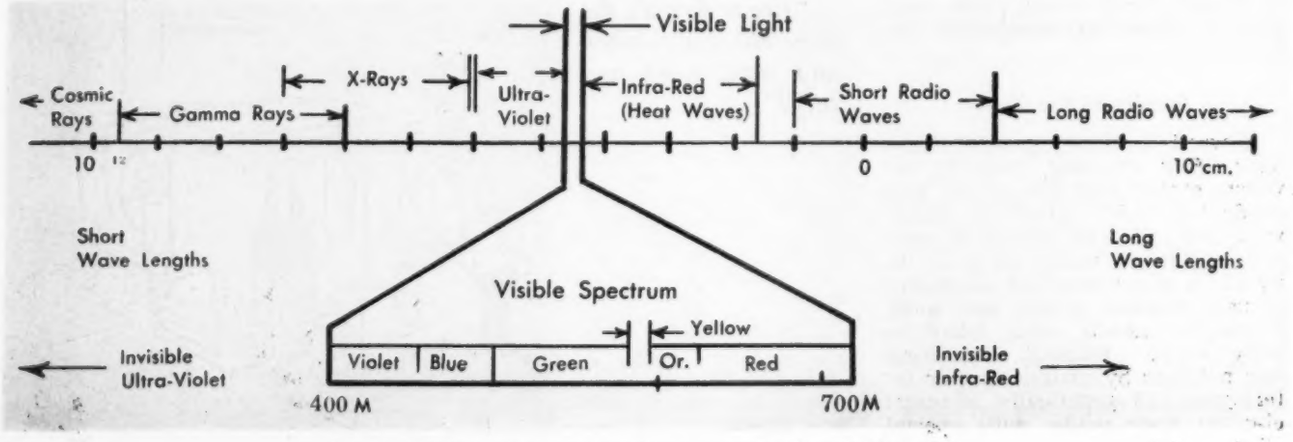


Fig. 1.—Portion of energy spectrum occupied by visible light.

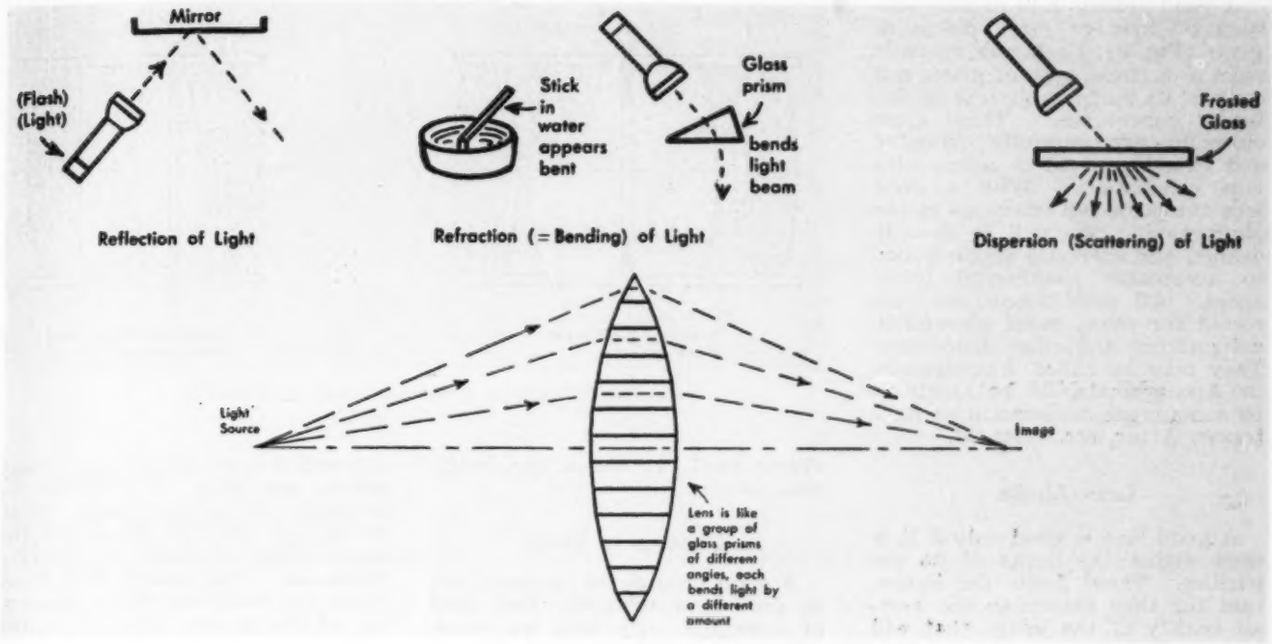


Fig. 2—Controlling light.

chemical action when the exposed photographic material is placed in the developer.

We now know something about what light can do. Let us see what light is. Also how we can control light so that it will do the things we want it to do.

Energy Spectrum

Scientifically, light is a form of electrical energy. We all know many forms of electrical energy, such as radio waves, X-rays, and even the more potent and mysterious gamma and cosmic rays (Fig. 1). All of these rays of energy are similar. They differ only in the frequency of their vibrations or wave lengths, and in their relative energies. The band of electrical radiation that we call visible light is a very small portion of the entire electromagnetic spectrum of energy. This portion is very important to us personally for it enables us to see. The nerve cells in our eyes are finely tuned to this visible range. Our eyes respond to their vibrations and even divide them into smaller portions. We call these portions colors of the spectrum. Each color, such as red, yellow, green, or blue therefore consists of a narrow band or a combination of different wave lengths. Blue light, for example, has a shorter average wave length and more energy than an equivalent intensity of red light. White light is a balanced combination of all the colors in the visible spectrum.

In photomechanical platemaking, the sensitized colloids are largely sensitive to blue, violet, and ultraviolet light. In photography the films we use may be sensitive to part or all the colors of the visible spectrum of light. This range of sensitivity is important, for the controls or lenses that we use for light, act differently for each color. Let us next consider how these controls work with light.

Negative Stops Light

Light tends to travel in straight lines from its source. The source can be a glowing object such as the sun, a light bulb, or an arc lamp. Or it can be an illuminated secondary source, such as the light from the moon, or the light reflected from a piece of copy. The simplest way to control light is to stop it. We can do this with a mask. A negative is such a mask. It will transmit or block the passage of light in proportion to the relative density of its image.

To further control light we can reflect it as we do with a mirror. Light can also be refracted or bent when it passes at an angle from one transparent medium through another (Fig. 2). We have all seen this illusion when we poke a stick into water. A glass wedge or prism will similarly refract light. If we grouped a large number of small prisms with different angles into an orderly cluster, we could make them bend all the light they receive so that the light will converge to a point. This gathering together of light into a bundle is normally done with a lens. A lens is therefore equal to an infinite number of prisms each one of which bends the light beam it receives and directs it to a common point. Instead of having millions of small flat prismatic surfaces, the surface of a lens in effect combines them together so that they form a continuous curvature (Fig. 2).

Properties of Lenses

We can make a lens from any transparent material that will bend light. The amount that a transparent material will bend light is a measure of its index of refraction. We can make a simple lens from a drop of water or a piece of ice. Glass is used to produce a better and more permanent lens. Glass has a greater light-bending power or index of refraction than does water. There are also many types of glass. Each has a different capacity to bend light. A little later we will discuss how and why these different glasses are used to produce the lenses we require for photography.

If we are to bend light accurately so that it will converge to a point or be projected as an image, we must use a lens that is made to very exacting conditions. In all good lenses, selected pieces of glass are ground and polished with curved surfaces that must be accurate to within 0.00001-in. This is almost too small a dimension to conceive. It is roughly 1/100 the thickness of a sheet of onionskin paper.

A simple lens, such as a reading glass, will not combine the bundle of light rays into an exact point or project an exactly proportioned and detailed image. Such a lens introduces many errors. These errors result in a loss of image definition and distort its geometric proportions. To correct some of the distortions of a simple lens, another lens is added to it. This additional lens is designed and ground so that its light bending properties will neutralize part of the errors in the first lens. More lens elements can be added to further reduce the loss of definition.

A good process lens usually consists of four or more pieces of glass (Fig. 3). Each may be made from a different type of glass, and each of its surfaces ground to different curvatures. These glass elements are carefully mounted and exactly spaced to agree with lens calculations. With a good lens the projected image on to the photographic film will be sharply defined and correctly proportioned to acceptable commercial tolerances. All good lenses are corrected for color, zonal aberration, astigmatism and other distortions. They may be called Anastigmats, or Apochromats, or be identified by some trade designation as Apotessar, Artar, etc. (Fig. 3).

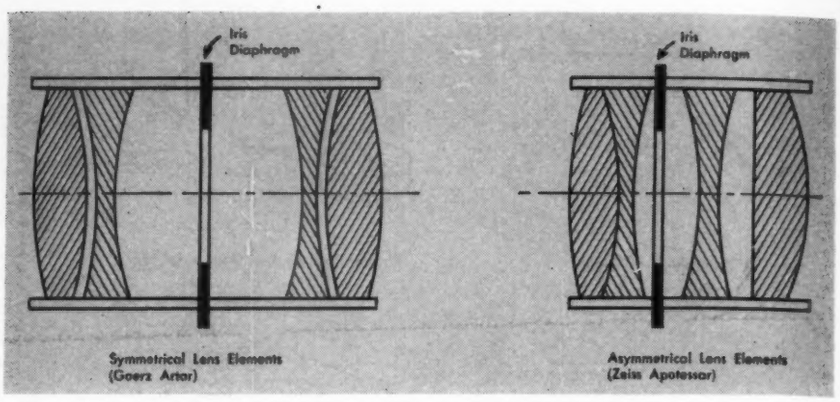


Fig. 3.—Section of process lenses (schematic).

Lens Limits

A good lens is good only if it is used within the limits of its capacities. These limits are important for they determine the overall quality of the image that will be produced on the photographic film. Let us next see what these limits are, and just what happens when we go beyond them.

The most common requirements demanded in camera operation is that the image *must be in focus.* To be in focus means that we are obtaining the maximum overall sharpness of image definition on the negative plane. This sounds simple, but it is not easy to obtain. Here are some of the conditions that can throw the image out-of-focus.

Flatness of Field

A good process lens is corrected to provide a relatively flat field of coverage. By this we mean that the image from a flat piece of copy that is held in the copyboard will come to a focus in a flat plane in which the photographic film is to be located. However, flatness of field is a relative condition. In actual practice the plane of sharp definition will vary in its distance from the plane of the lens for different radial distances from the optical axis of the lens. This variation in the flatness of the focal plane is usually kept small within a specified angle of coverage. Many lenses are rated as suitable for covering an included angle of 40 or 45 deg. Beyond this angle, the out-of-focus condition is severely increased. This means that if we focus the image exactly in the center of the ground glass or on the film, it may be slightly out of focus 2 in. or 3 in. from the center. The image may again be back in focus at a radius of 10 in. or 12 in. from the center. Beyond the full rated angle of coverage for a lens, the out-of-focus condition increases rapidly and results in an increasingly blurred image. Obtaining a flat field of coverage is more important on the process camera than it is in a phototypecomposing machine. Work on a process cam-

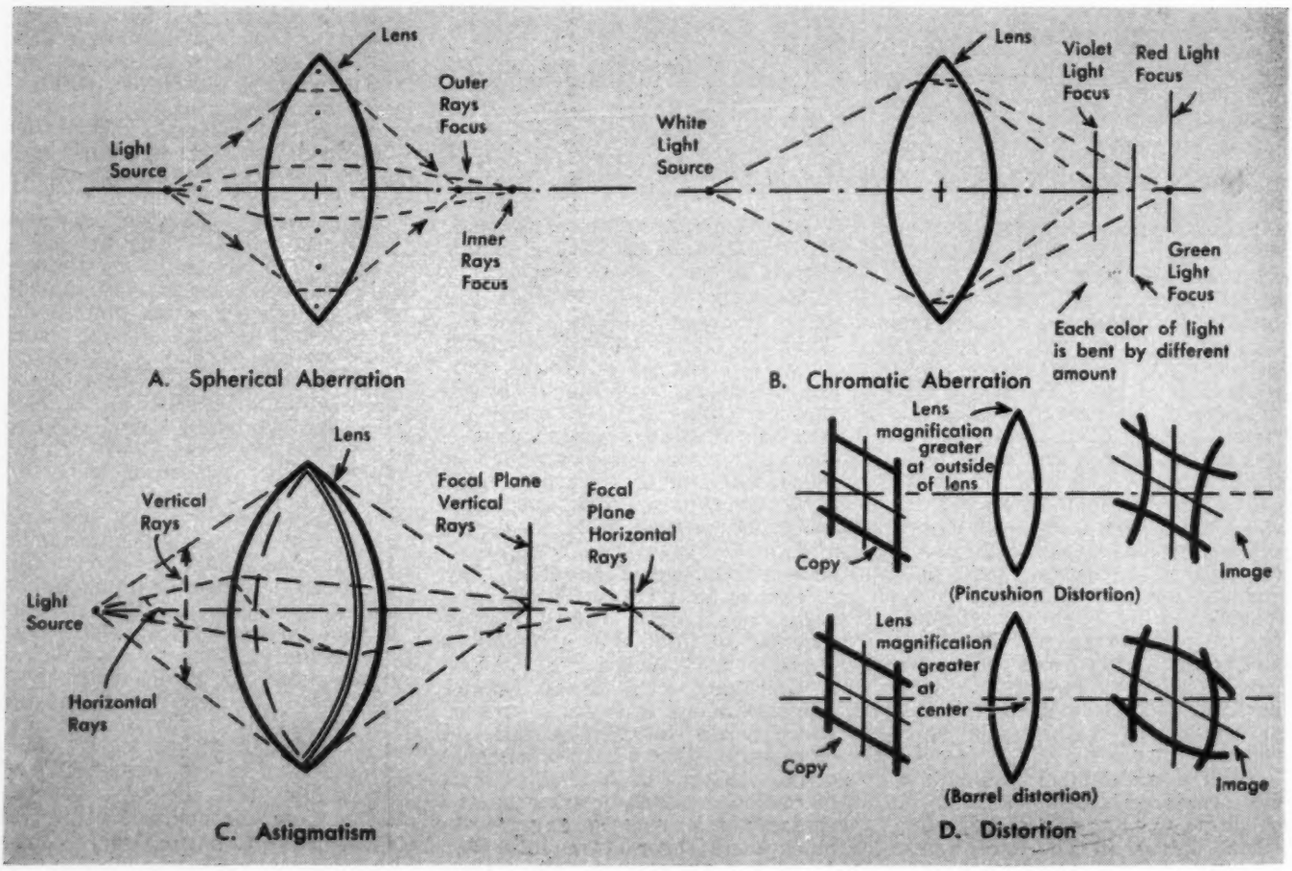


Fig. 4.—Lens errors.

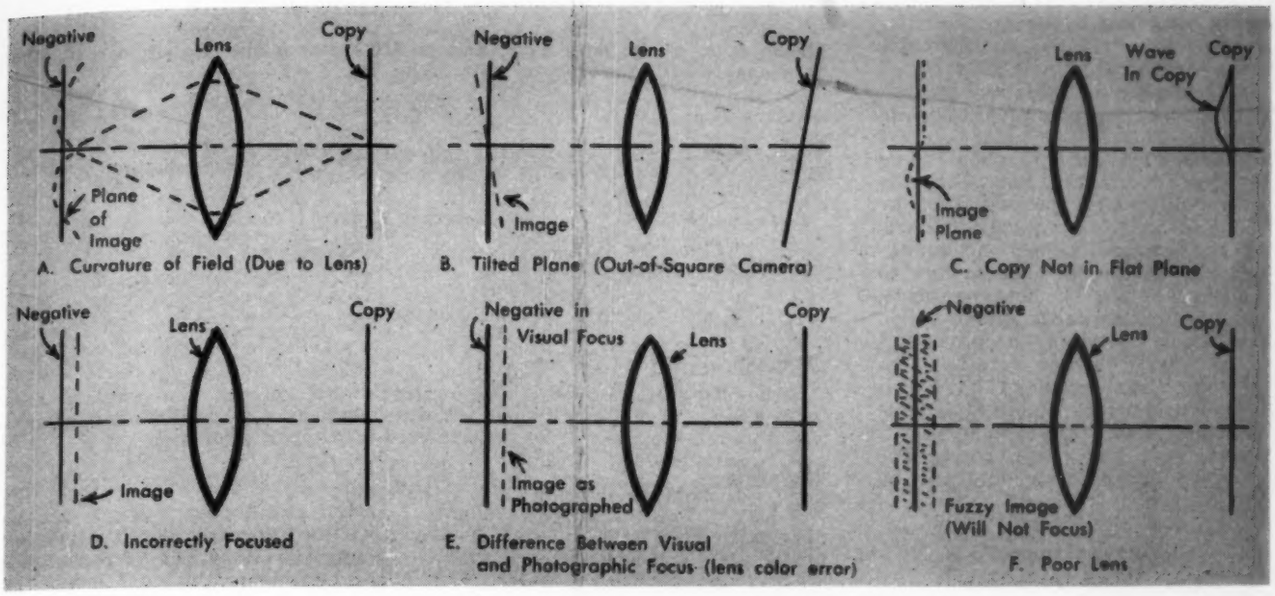


Fig. 5.—Out-of-focus conditions on a process camera.

era may extend to an included angle of over 40 deg., while the exposure of a single character at a time in photo-composition requires only a few degrees of coverage.

Critical Focus

Our own eyesight is an important factor in determining if a camera is sharply in focus. The ground glass used on a camera tends to diffuse the image. Accordingly exact focus at any point on the ground glass is difficult to determine even with the aid of a magnifier. For critical sharpness, a microscope must be used. The microscope is focused on the same image plane that the photographic emulsion will occupy. This can be done by replacing the ground glass with a plate of polished plate glass. In commercial practice the ground glass is usually prepared with a clear glass circle and clear diagonal stripes. This is done to permit critical focusing of the image.

Planes Must Be Exact

A change in the distance between the lens and the photographic planes for any camera size ratio as small as 1/64 in. will cause an out-of-focus condition. It is therefore essential that the planes of the copy holder and the photographic film be exactly flat, parallel to each other, and perpendicular to the optical axis of the lens as in Fig. 5.

A warped or twisted copyboard, a tilted or dished vacuum back, or a curved film on a camera will all result in portions of the image being out-of-focus. To a limited extent, the use of smaller lens diaphragm openings will increase the depth of focus. This will sharpen up image detail that is not in the exact focal plane on the camera. As the lens stops used are progressively reduced in size, the image definition also deteriorates. This is due to a diffraction pattern that forms around the margins of the diaphragm opening. As the opening becomes smaller, the pattern becomes larger and more prominent in proportion to the light that is transmitted through the lens to form the image. In the Graphic Arts field, the use of diaphragm openings that are smaller than f:32 will show an increasing loss of image definition. The best definition from a process lens is usually obtained by using a stop of about f:16. The increase in speed and definition that the larger stop provides is only possible if the image is in focus over the entire negative area.

Modifying Typography

The special cameras that are available for modifying typography, use either an optical or physical means to alter the geometric proportions of the image of the copy. This may be done by warping the copy; by introducing anamorphous or cylindrical lens elements into the optical system; or by placing a distortion mirror in the optical path (Fig. 6). In such instances we are in effect working with three dimensional object and image planes. This produces different ratios of enlargement or reduction in different portions of the image.

In any fixed optical system, a tilted or curved copy surface will provide sharp definition on a correspondingly tilted or curved negative surface. Such a condition is not easy or practical to obtain. While a curved film holder or an auxiliary optical system can be used to compensate for the image plane distortion, it is usually simpler to rely on the increased depth of focus that small diaphragm openings permit. The loss of image definition that results is frequently acceptable when the modifications are limited to large detail and to display type.

Some of the other conditions that contribute to a loss of image definition can result from using a lens that is not color corrected and from vibration that is transmitted to the camera.

As mentioned previously, a simple prism or lens will bend different colors of light by different amounts. If a simple lens is used in a process camera or in a phototypecomposing machine, the colors of light that make up white light would come to a focus on different planes. In the plane occupied by the negative, only one of the color images will be in focus. The other colored images would be slightly diffused on the negative by their being out-of-focus. If the film used in the camera is limited

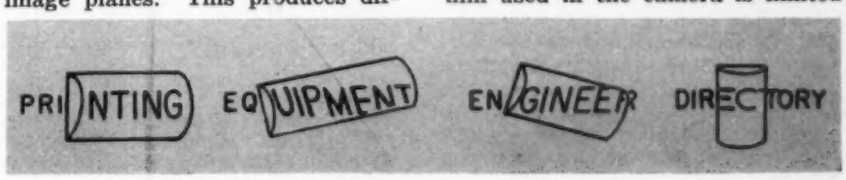


Fig. 6.—Influence of cylindrical lens on type modifications.

in its color sensitivity to the color of the image in focus, or if a color filter is used that will only transmit this color of light, a sharp image on the negative can be obtained.

Another difficulty when using non-color corrected lens elements is that although the visual image may appear to be sharply in focus on the ground glass, the photographic image in the color to which the film is most sensitive, may be considerably out-of-focus. Well-known process lenses of longer focal lengths that were not adequately color corrected have evidenced conditions where the plane of visual focus was almost ½ in. away from the plane where the sharpest image was obtained on the negative.

Vibration Causes Loss of Image Definition

Vibration is a physical condition that causes more loss of image definition than is commonly realized. A hairline or a fine serif in type design may only measure 0.003 in. in thickness. When this detail is projected across 5 to 10 ft. of space, as is done in a process camera, it is important that its image remain fixed during the entire period of exposure. A slight vibration due to presses, pumps, or other operating machinery in the vicinity of the camera can induce a vibration of the image. If this occurs during the exposure time it will diffuse the image detail.

Image Size on Negative

Equally important to exact focus, is obtaining the correct reproduction ratio or image size on the negative. The size of the image that is obtained has a direct geometric relationship to the locations of the negative, lens, and the object or copy that is photographed. When an amateur camera is used to take a picture, the closer you come to the subject, the larger its size will be on the negative. The better amateur cameras are provided with a subject distance adjustment so that you can focus the image sharply for the separation between you and the subject.

This adjustment for focus and size is provided in every process camera used in the Graphic Arts.

Modern process cameras are built with their back section extending through the darkroom wall. In this way the negatives can be handled efficiently without the use of plate or film holders. The plane of the negative is usually fixed. The planes of the lens and copy are then adjustable along the camera bed to provide for the desired size ratio and focus. The efficiency and accuracy of a camera are improved by including a means for locating the lens and copyboard by measurements instead of by visual focusing. These provisions may consist of pre-calibrated steel tapes; scales or counters that are positioned to charted locations; or auto-focusing screw cam arrangements.

The location of the lens, copy, and negative planes are related to each other by a simple mathematical formula. This is:

Distance from:

$$\text{A.—Lens to negative} = \text{Focal Length of Lens} \times \left(1 + \frac{\text{Ratio of}}{\text{reproduction}} \right)$$

$$\text{B.—Lens to copy} = \text{Focal Length of Lens} \times \left(1 + \frac{1}{\text{Repro. ratio}} \right)$$

$$\text{C.—Copy to negative} = \text{Focal Length} \times \left(2 + \text{Repro. ratio} + \frac{1}{\text{Repro. ratio}} \right) + N.C.$$

where *N.C.* is the nodal correction.

The nodal correction is a small fraction of an inch. It results from a displacement of the image plane when the light path is shortened as the rays pass through the glass in the lens instead of through air.

Focal Lengths

In phototypecomposing machines it is mechanically desirable to keep the negative material and the photo matrices in fixed photographic planes. In order to obtain different size ratios from a given photo matrix, two systems are in use. The Fotosetter and the Photon have a series of 8 or 12 different lenses. Each lens has a different focal length. Each lens is in turn positioned where it will produce a specific size ratio between the photo matrix and its image on the film. In the Monophoto phototypecomposer, a single lens is used. The required size ratios are obtained by bending the image beam back and forth between a pair of prisms. This provides a geometric relationship that is similar to that used on a process camera.

The limits to the size ratios of enlargement and reduction in photocomposition are entirely dependent on typographical considerations. This is determined by how much distortion of the basic type design and its proportions can be tolerated for the quality level of printing to be done. The same tolerances govern the basic size of the photomatrices used in photocomposition and the speed with which they can be composed.

Loss of Image Definition

A final word about another condition that will cause a loss of image definition—that of flare. Flare is due to unwanted light that is added to the image during its exposure on the film. This may be due to scattering of the light as it passes through dusty or dirty lenses; or to some of the light being reflected from the many surfaces on the lens elements, or from the inside of the lens barrel; or to excessive dust in the air. It may also result from a bright light reaching the lens from a window or other lights that do not come directly from the copy. Most modern lenses are surface coated to reduce internal reflections and this one source of flare. However, surface coatings cannot correct for dirty lenses, scored photomats, or smoke-filled galleries. These conditions can produce the same results as are obtained when taking a photograph in a fog.

(To Be Continued)

Harris Press For Institute — Harris-Seybold Co., Div. of Harris-Intertype Corp., recently loaned a 23 in. by 36 in. two color Harris offset press to the Chicago Lithographic Institute. Participants in the formal handing over ceremony were, left to right, seated: Ernest Karge, treasurer, Chicago Lithographic Institute; R. R. Perry, vice president of sales, Harris-Seybold; and Harry Spohnholtz, president, Local No. 4, Amalgamated Lithographers of America. Standing: Frank Oehme, executive director, Chicago Lithographic Institute; Jos. McConnaughey, jr., H-S Western manager.

Powderless Etching of Copper Developed by Photoengravers

What is claimed to be a reliable method of rapid powderless etching of copper photoengraved plates has been developed under the auspices and leadership of Photoengravers Research, Inc. by the Engineering Experiment Station of Georgia Institute of Technology. With this process, it is reported a fine screen etch can be achieved in approx. 2½ to 3 min.; a coarse screen etch in 5 to 5½ min. The process can be put into use in photoengraving plants by simple modification of present copper etching equipment.

The product which makes the rapid etching action possible has been designated GT-1. It is a powder additive which is dissolved in the etching bath. In practice, a standard upright stoneware etching machine is modified for this process by insertion of a removable plastic rotating wheel which holds plates up to 15 in. by 18 in. This wheel turns the plate in the bath, eliminating the necessity of interrupting the process to turn the plate. The wheel is easily removed for use of the machine for conventional processes.

The additive (GT-1) precipitates a protective film on the bare copper, protecting the plate surface from the etching effect of ferric chloride. The film is broken at the bottom by the splash when the paddle is running at a normal 500 r.p.m., thus permitting the etching to continue but leaving film on the sides of the dot. This is similar to powderless etching of magnesium and zinc.

At the present time the powderless copper etch process is limited to etching of halftones, which constitute the majority of copper engravings. Photoengravers Research, Inc. is continuing development work, and indications are that application of the process to etching of line and combination plates can be expected.

Results of Process

Results of the new process are listed as follows: Superior etching results are achieved in one bite. Quality is generally superior to conventional techniques, producing excellent pyramid-shaped dots and superior depth in both shadows and highlights. Tonal loss during etching, throughout most of the scale, is negligible as compared to conventional etching. The process provides greater control of etching, excellent matting and electrotyping characteristics and better tonal gradations. The development also represents major time savings and permits increased volume of platemaking.

A. J. Powers, jr., vice president for research and development, Chemco Photoproducts Co., Inc., recently announced his company has concluded an agreement to manufacture and sell the additive GT-1, and will market it under the Chemco brand name of Kopr-Plus. Under terms of the agreement, use of the process is limited at this time to members of Photoengravers Research, Inc.

The plastic wheel required for modification of the bath is available from Photoengravers Research, Inc. Non-member photoengravers interested in obtaining more information should write: George Hoffmann, secretary, Photoengravers Research, Inc., P. O. Box 1099, Savannah, Ga.

Research Notes

Research Institute Adds Engineers—Two industrial engineers have been added to the Chicago staff of the American Newspaper Publishers Assoc. Research Institute, according to Cyrus L. MacKinnon, managing director. Philip R. Dunne, whose background includes a combination of engineering and journalistic experience, has become director of publications. Dunne will participate in engineering and research projects involving newspaper operations. Don Warner has been appointed to the production engineering section of the Research Institute as field engineer. He worked on a Research Institute project while studying for his Master's degree in engineering at Johns Hopkins University.

Goss Expands Research—Designed to help customers, Goss Printing Press Co. is setting up a specialized market research department to supplement its regular marketing analysis work. Thomas Nendick has been appointed market research manager.

Nendick will analyze equipment problems, and will devote attention to all aspects of publishing. The broad range embraces the interrelation of every other department with the pressroom, stereotyping and electrotyping departments, the requirements of advertisers, studies of production costs, systems analyses, market growth, color, and factors affecting financing. It includes printing plants of all sizes.

Alcoa Research — Claimed to be the nation's first fundamental research operation to serve the foil and packaging industries was announced in September by Aluminum Company of America. Representing a consolidation and major expansion of the company's research operations in these fields, the new organization will be known as the Foil and Packaging Div. of Alcoa Research Laboratories. It will be located at New Kensington, Pa.

BECK

Robertson Photo - Mechanix — Robertson Photo - Mechanix, Inc., Chicago, recently announced that William R. Beck, jr. has joined the company as chief research engineer, further augmenting the recently organized research and development department, under the direction of D. F. Keller, chairman of the board. Beck is an Illinois Institute of Technology graduate in Mechanical Engineering. This Fall he expects to receive an additional degree in electrical engineering.

Testing ROP Color Inks

Testing run of paper color inks by American Newspaper Publishers Assoc. for its members to determine whether the inks meet certain specifications of strength, hue and viscosity started Sept. 16. Operated by ANPA Mechanical Dept., the service was approved by the ANPA Board of Directors after reports showed some inks furnished daily newspapers were not measuring up to specifications defined by the joint ANPA-AAAA committee.

Sample ink testing will show to what degree the so-called ANPA-AAAA ROP color inks are "off" in color, strength and viscosity. Preliminary tests showed ink errors from 5 to 50%, with only two out of 10 sets of ink received from newspaper plants being acceptable in strength and viscosity. Annual consumption of ROP color inks by daily newspapers is estimated to exceed $2 million.

All color ink testing will be done in ANPA headquarters, 370 Lexington Ave., New York 17, N. Y. ANPA members who wish to submit ink samples will be provided with jars and special mailing cartons.

What the Boys Heard And Talked About at

Pacific Mechanical Conference

By FRED J. MOYER, Sr.*

***Secretary, Southern Div., Pacific Newspaper Mechanical Conference.*

The Pacific Newspaper Mechanical Conference was held at Hotel Multnomah, Portland, Ore., August 23-25. Approx. 450 production and mechanical executives from 10 Western states and Alaska and Hawaii attended.

The opening session was a departure from the usual procedure. It was given over to a Leadership clinic. Under the chairmanship of Fred Moyer, jr., Portland (Ore.) *Oregonian,* and Co-chairman John C. Bonato, San Francisco (Calif.) *Chronicle,* there were two speakers followed by general discussion. The first speaker was J. V. Kappler, West Coast representative, National Management Assoc., followed by Elbert E. Boice, personnel department, Jantzen, Inc.

In Kappler's presentation he laid down several challenges to supervisors:

Assume responsibility for leadership. Realize that in any human activity, leadership is absolutely necessary to a successful conclusion.

Develop an objective point of view. Realize that in all areas of management the most important characteristic in human relations is the development of a maturity of viewpoint in order to analyze a problem and make a decision based on the facts of the case rather than its effect upon us.

Develop open mindedness and a receptivity to people which make them feel free and at ease in our presence.

Consider ourselves as professional men.

Give ourselves background through association with other supervisors, through reading, studying and through considering all the latest information which is being developed in the field of management.

People Make Up Human Element

During his address, Elbert E. Boice commented:

"There is a trend toward giving greater stress to the importance of human relations in business and industry. We, in the training field, are striving with all our might to get management people to realize this importance and to establish a code of ethics to be practiced by both labor and management. First, we must all realize that a man cannot be turned on and off like a machine.

"In the next eight years we must produce about 40% more. There will be much greater need for highly skilled workers—unskilled will be in lesser demand. There will be 10 million new workers added to the market. The need for every business to develop its own training program will be a necessity."

Small City Newspapers

Ernie Loebner, Olympia (Wash.) *Daily Olympian,* was chairman of the clinic for small city newspapers. The talks were *Speed Color with Polaroid,* by Howard Fitzsimmons, Monterey (Calif.) *Peninsula Herald; Cost Beyond Mechanical Department Control,* by E. C. Newton, Vancouver (B. C.) *Columbian; Users of Scan-A-Sizer,* by Neil Hurlburt, Eureka (Calif.) *Humboldt Standard;* and *The Wenatchee Way,* by Harlan Honeysett, Wenatchee (Wash.) *Daily World.*

Composing Room

The composing room clinic with Frank Mack, Victoria Press Ltd., Victoria, B. C., as chairman, and Larry Hendricks, San Diego (Calif.) *Union-Tribune,* as co-chairman was well attended and showed much interest. The talks were: *The Impact of Photocomposition,* by Howard King, Intertype consultant; *TTS Operation,* by Coleman Wright, the Sun Company, San Bernardino, Calif., and Larry Hendricks, San Diego (Calif.) *Union-Tribune;* slides and talk on *New Linofilm Development,* by Rene Leach, Mergenthaler Linotype Co., and *Amalgamation Problems,* by Harold Grayston, Salt Lake City (Utah) *Tribune.*

King on Phototypesetting

In his usual interesting and forceful manner, Howard King said: "Today we stand on the brink of a changing industry. Many of the new developments, it seems, are housed in the top of a funnel. Soon they will begin dropping into the neck of that same funnel for final release to the industry. It is happening now. One by one these new developments are being released for our use and already we are beginning to see them replace many of the old ideas.

"To some, photographic composition has been a long time coming into its own. Today, less than seven years after the first commercial machine was installed, we are

Some of the past presidents attending the recent Pacific Mechanical Conference meeting in Portland, Ore. Seated (left to right): Earl Leavitt, Culver City (Calif.) *Star-News;* Art Stanley, Santa Monica (Calif.) *Outlook;* Ed Sparks, now with New England Newspaper Supply Co. Standing: Gordon Dixon, San Rafael (Calif.) *Independent-Journal;* William Weigand, Glendale (Calif.) *News-Press;* Harry Machum, Portland (Ore.) *Journal;* W. E. Gibbons, production manager, Portland (Ore.) *Journal.*

just beginning to see what a terrific impact photocomposition is having and will continue to have on the future of our industry."

Continuing, King said: "Employers and the unions alike have at last found out it requires special training on the part of many to successfully build a department to handle photographic composition. Sure, an operator of hot metal machines can within a few weeks become an excellent Fotosetter operator. However, that is only one phase of the overall operation. It is necessary to: (1) Train people to speak a different language. (2) To work over the light table rather than working on a makeup frame. (3) To cut and paste in corrections and illustrations rather than to saw and adjust in a composing stick. (4) To speak of negatives, positives, contact film, rather than leads, slugs, repro proofs and many other familiar hot metal terms. The minute you have a staff assembled and trained for this purpose, then and only then will you see the truly tremendous possibilities of photographic composition.

"In photographic composition, no one will be losing his position. Instead, the Fotosetter will be creating new business where none grew before and helping others to expand to accomplish things never before thought possible.

"The Fotosetter produces only composition of the highest quality at machine speeds and is therefore not a cheap method of setting type. Nor is it a substitute process for any other method.

"I am going to assume you know a Fotosetter in appearance resembles a hot metal mixer machine; it operates the same way as the conventional machines with circulating matrices; it photographs letter by letter and there are no spacebands. I am also assuming you know this kind of composition eliminates these headaches: (1) Ragged letter outlines due to ink squeeze; (2) Broken letters, underinked letters, pin holes; (3) Filled in letters, smeared proofs; (4) Uneven type colors or weight; (5) Reshooting negatives to get acceptable image; (6) Excessive opaquing, and many others.

"I assume you also know and realize that three basic fonts of matrices will set all basic sizes from 3 pts. to 54 pts. as well as odd sizes such as 7, 9, 11, 13 and 16 pts.

Amalgamation Problems

Harold Grayston discussed analytically the problems arising in consolidation of newspaper plants. He assured his audience that it can be done but there will be many problems to be solved.

Stereotype Clinic

The Stereotype clinic with Mark Mossing, Seattle (Wash.) *Times,* as chairman, and Fred Steele, Phoenix (Ariz.) *Gazette,* as co-chairman, gave the delegates much to think and talk about. The speakers and subjects were as follows:

"Good Stereo Plates Are not Accidental, by Ferd A. Mier, Detroit *Free Press;* (see separate article on another page); *Progress in No-Pak Mats,* was discussed by Richard

Officers of the Portland (Ore.) meeting of the Pacific Newspaper Mechanical Conference. Left to right, they are as follows: Ernest Loebner, Olympia (Wash.) *Daily Olympian,* vice president; Harry Machum, Portland (Ore.) *Journal,* president; Donald Newhouse, Portland (Ore.) *Oregonian,* secretary.

E. Lewis, Manager ANPA Mechanical Dept.; *One-Piece Highlighting,* by Dick Wayman, Pacific Electrotype, Seattle, Wash., and *Your Printing Metals,* by Leslie J. Larrieu, Morris P. Kirk & Son.

Pressroom Clinic

Chairman Harry Wingard, Monterey (Calif.) *Peninsula Herald,* and Co-Chairman Thomas Leedham, Portland (Ore.) *Journal,* were in charge of the pressroom clinic.

Speakers and subjects were: *The Magic of Color,* by O. C. Holland, Interchemical Corp.; *ROP Color,* on film; *ROP Color Report,* W. E. Gibbons, Portland (Ore.) *Journal; New Press Development,* Wm. W. Henderson, R. Hoe & Co. Inc.; *Goss High Speed Paster and Paster Pilot,* on film; and *A Better Way to Color Matching,* by Vince Pampanin, California Ink Co.

Color Matching

In Pampanin's talk some good suggestions were offered. Pampanin said: "The future of our industry in connection with advertising bears a direct relationship to the future planning of color in newspapers.

"Every sizeable ink company produces color catalogs for the convenience of the advertising agencies, advertising departments of the newspapers, along with the pressrooms.

"When a catalog was discussed within our organization, we made a survey. Advertising agencies, department stores and newspapers were constantly asking for proofs or swatches of our ink even though there were catalog numbers. Many man hours were lost, both on the part of the ink companies and the advertising agencies, in producing swatches.

"From the paint industry we adopted the idea that swatches of all our colors should be included in the new color catalog. The next question was selection of color. We immediately adopted the three ANPA process colors. Most newspapers keep process colors on hand in order to produce three color ads. We added

(*Continued on page* 83)

One-bite Fast Photoengraving On Zinc Alloy Is Announced

The Vitaplate-VitasolV one-bite photoengraving process for commercial and newspaper work has been announced by Imperial Type Metal Co. Vitaplate, from which the engravings are made, is a special zinc alloy. VitasolV is a specially compounded liquid for etching the plates.

It is claimed that a 65 line screen halftone Vitaplate can be etched in approximately 2 min. A halftone carrying 100, 110 or 120 screen halftone can be etched in 1 min. In the case of a combination halftone and line plate, for instance, 18 in. by 24 in. size, a depth of 0.0055 in. in the 65 line screen halftone area and a depth of 0.030 in. in the line area can be reached in 12 min. If a depth of 0.040 in. in the line area is desired, that depth may be secured automatically in the machine by setting the control knob for longer time to permit etching to the 0.040 in. depth.

However, in order to employ the Vitaplate-VitasolV process it is necessary to use a high speed etching machine such as the Chemco or Master Etcher, because of the method of moving the plate during the etching period as well as the method of throwing the etchant against the plate.

Sponsor states that after the plate to be etched has been mounted in the machine and the machine has been started, the etching action is entirely automatic, no attention being required by the operator. To illustrate, if the operator sets the machine for 0.030 in. etching depth for a period of 12 min., the etching action is terminated automatically at the end of the 12 min. period.

It was also explained that a VitasolV bath will etch 125 oz. of zinc. On an 18 in. by 24 in. flat with approx. 65% open area, with a depth of 0.028 in. in the line areas, from 8 to 10 plates (or about 7 lbs. of metal) can be etched with one bath. For greater depth in line areas, the control on the etching machine may be set for longer etching time.

Imperial Type Metal Co. explains that the bath may be kept in balance after the first plate has been etched by adding acid or by extending the etching time, or a compromise may be adopted by adding some acid and lengthening the etching time according to work pressure conditions in the plant.

Further statements by sponsor are: (1) The bath is practically odorless; (2) Vitaplate solders and/or patches as easily as standard zinc plate; (3) Cold top enamel can be used successfully; (4) Loss of image on a single subject is imperceptible to the eye; (5) There is no lateral etching when Vitapalte and VitasolV are used properly; (6) One paddle speed for all types of work; (7) Excellent depth in small type.

VitasolV is supplied in 5 gal. cans and in 55 gal. drums. Circle No. 274 on Reader Service Card.

PROPERTIES AND PROCESSING OF

Presensitized Offset Printing Plates

Part V—Plate Qualities Defined

By AXEL LUNDBYE*

**Consultant, Printing Engineering Div., The Todd Company, Inc., Rochester, N.Y.*

Now that we have discussed presensitized offset printing plates at some length, we will summarize the pertinent seven points enumerated in Part I. The points are: (1) Quality; (2) Good tone reproduction; (3) Ink smoothness on printed sheet; (4) Dot sharpness; (5) Good resolution; (6) Uniformity, and (7) Elimination of slur, as follows:

Point 1. Quality. What do we mean by quality in offset printing? It is the ability of the plate and process to give a visual characteristic of the printed image as close to the original art work as possible.

Point 2. Good tone reproduction. We are concerned with the relationship among the tones we have in the original art work and the printed halftone reproduction. There are two phases here—subjective and objective.

Subjective tone reproduction is not too positive. Several individuals may be asked to give their opinion about the tone value of the printed sheet in comparison with the original art work. As a rule, several opinions will be the result. The reproduction is, as a general rule, considered satisfactory if we have most of the important tonal differences of the art work visible and they give the impression of equal differences in tone value between printed sheet and art work. This type of comparison is subject to variations because we depend on the different individual taste and visual experience, which varies greatly.

Objective tone reproduction is measured by means of optical instruments, *i. e.,* by using a reflection densitometer. By this instrument, it is possible to measure the various densities in the tones on the original art work by making measurement on the printed sheet in the same areas, and then plotting the result on graph paper. Such graphs can readily be read and will give an immediate idea of the fidelity of the particular areas which have been plotted. If they are not correct, the graph will so indicate.

Point 3. Smoothness of ink on the printed sheet. We know, that with a grained plate, distortion takes place in the dot contours. This is sometimes noticeable with the naked eye and always with a good magnifier. With presensitized plates, the dot distortion can never be seen with the naked eye. If the plate has been properly processed, it is very difficult to detect it with a good magnifier.

If the print contains indications of scumming, ink filling, surface picking of the paper, uneven dot contour, mottled solid or the print does not look good, then we can say the ink is not laying smoothly on the paper. Most of the above cannot be blamed on the plate if properly processed.

Point 4. Dot Sharpness. To have a sharp dot on the printed sheet is mandatory for good offset printing. Dot sharpness starts with a good negative. If the negative does not have distinct dot formation without visible fringes, we are never going to get a good plate and, therefore, not a good print. If the negative is all right, then the dot sharpness becomes a function of surface of the plate and setting of the press. With a presensitized plate, if one of the variables is eliminated, the only one left is the setting of the press.

The grained plate tends to show a sandy effect on the printed sheet. However, this effect is not too serious when we use 120-133 line screen; but when we start to go to 150-175 and up to 300 line screen, then it becomes very serious, and it becomes worse with the finer screen. With presensitized plates, we sometimes get this sandy effect on the printed sheet, and immediately blame it on the plate. As a rule that is not the plate fault because some transtortion takes place from the transfer from blanket to paper, especially if we don't use the proper blanket and pack to the proper height. With fine screens, use a hard blanket, and pack the blanket correctly.

Point 5. Good Resolution. When we talk about resolution, we mean that the fine detail in the art work reproduced on the printed sheet can be seen easily and we get more or less the same contrast in the sheet we see in the original work.

Point 6. Uniformity. By uniformity is meant the evenness of ink lay on the paper in the solid areas. If the paper has an uneven surface, we will get a number of areas in the solids with varying ink thickness, and we sometimes blame that onto the plate. We say the plate does not transfer the ink properly. The plate has no bearing on the above.

Point 7. Elimination of Slur. Slurring is a common phenomenon in offset printing. It causes halftone shadows and reverse lettering to fill in. In many cases, the pressman often thinks it is scumming and blames it on the plate, and he will try to fight this condition with more acid in the fountain solution. The only thing he will accomplish with that attack is to destroy the highlight dots and make the plate go blind. When slur occurs, look at the printed sheet with a good glass and you will see slur or drag. It will al-

(*Continued on page* 80)

New Information on Tinting

By CHARLES H. BORCHERS*

**Supervisor, Paper and Ink Div., Lithographic Technical Foundation, Inc. From a report in LTF's Research Progress No. 39.*

Tinting is an annoying problem that has defied solution for many years. It appears to be caused by an emulsion of ink-in-water, that is, an emulsion in which particles of ink are suspended in water. When this type of emulsion is produced on the press, a tint of the emulsified ink globules shows up in the non-image areas of the printed sheet. The desensitization of the plate is not affected. The emulsion merely floats in the water on the plate. It can be easily wiped off with a sponge but immediately comes back as soon as you start the press.

The exact things that produce ink-in-water emulsions have puzzled us for a long time. We know that under normal printing conditions we are always dealing with a water-in-ink emulsion—that is, an emulsion in which water particles are suspended in ink. We have also believed that certain surface active agents cause the normal water-in-ink emulsion to change over to an ink-in-water emulsion that produces tinting. These certain wetting agents lower the interfacial tension between the ink and water so that they can mix more thoroughly and easily. Because of this possibility, we have always suggested that the use of wetting agents in fountain solutions be avoided for most work.

A Major Cause of Tinting

In our investigations of cases of tinting at the LTF Laboratory, it is common to hear that the printer is able to stop the tinting simply by changing to another stock. When the original stock is tried again at a later date, the tinting again shows up quickly. Because this is so common, we believe that paper can be a source of surface active wetting agents that can produce tinting. This, however, does not necessarily rule out inks, fountain solutions and the condition of plates which may also be at fault.

Tinting troubles are almost entirely limited to coated paper. So, through the years, we have tried a number of tests to measure a paper coating's ability to lower the surface tension of water and produce an ink-in-water emulsion. Two tests seemed to have the most promise. One is the foam test and the other is actual measurements of the change in the surface tension of distilled water.

For the foam test, 0.12 grams of coating is scraped off a sheet with a razor blade. It is then put in 15 cc. of distilled water in a test tube and allowed to soak. The mixture is then shaken vigorously for one minute. The coating from papers that were involved in tinting troubles usually produced a moderate to a large amount of foam that was stable for 10 min. or longer. Papers that did not give trouble generally produced little foam or a foam that settled quickly.

However, the correlation of this test to press experience was only fair. At times, a paper involved in a tinting complaint produced little or no foam. Also, a few coatings that caused no tinting produced considerable foam.

In the second test, we again used 0.12 grams of coating in 15 cc. of distilled water. We then measured the surface tension of the water with a DuNouy tensiometer to see how much it had been lowered by the coating. This seemed like it ought to be a good test but there was absolutely no correlation between the test results and press performance.

In late 1955, we ran across an interesting article by J. H. Bitter of the Dutch Graphic Arts Institute, Amsterdam (I.G.T.) in the March, 1955 issue of the Swiss publication *Schweizer Archiv*. In it, he described his work in linking the surface active agents in paper to tinting. One of his tests was very interesting. He would measure the surface tension of 50 cc. of tap water, dip a 5x5 cm. square of paper in the water for 10 sec. and measure the water's surface tension again. This was done three times and measurements of surface tension were made after each 10 sec. dipping. Subtraction from the original reading showed how much each dipping reduced the water's original surface tension. Bitter concluded from his work that any paper that lowered the surface tension of water more than 15 dynes per centimeter in three dippings usually produced tinting trouble on the press.

After modifying Bitter's method slightly, we tried it on papers in our current file that had been or were involved in tinting troubles. We found that the test gave better correlation than both the foam test and the surface tension lowering test using scraped off coating.

In Table I are listed some typical data that were collected. The figures in Table I are typical samples of data from 22 case histories. Four cases show good correlation and four do not.

Averages of the amounts by which surface tension was lowered for all of the 22 cases are shown in Table II. The averages in Table II show that papers involved in tinting problems lowered surface

(Continued on page 78)

Table I—SURFACE TENSION LOWERING
(Dynes per Centimeter)

Case No.	Tinting	Bitter's Method 10 Sec.	20 Sec.	30 Sec.	40 Sec.	Scrapings Test	Foam Test Cor.
1	yes	6.7	11	11	13	23	no
2	yes	20	23	23	24	23	....
3	yes	1.5	3.0	5.2	..	14	no
4	yes	1.7	3.2	7.1	7.8	17	yes
5	no	0.3	0.3	0.7	0.7	13	yes
6	no	0.8	1.4	7.9	12	17	yes
7	no	2.3	6.7	9.3	..	21	....
8	no	7.1	7.6	9.5	9.6	16	....

Table II—AVERAGE SURFACE TENSION LOWERING vs. TINTING
(Bitter's Method—Dynes per Centimeter)

	No. of Cases	10 Sec.	20 Sec.	30 Sec.	40 Sec.
Tinting	10	4.8	8.0	10	13
No Tinting	12	2.2	4.8	7.5	9

Table III—EFFECT OF ACIDITY ON SURFACE TENSION LOWERING

Case	Tinting	With Distilled Water 10 Sec.	20 Sec.	30 Sec.	40 Sec.
3	yes	1.5	3.0	5.2	..
4	yes	1.7	3.2	7.1	7.8
7	no	2.3	6.7	9.3	..
8	no	7.1	7.6	9.5	9.6
		With Acid (pH 3.6)			
	Tinting	10 Sec.	20 Sec.	30 Sec.	40 Sec.
3	yes	3.0	9.0	12	14
4	yes	13	21	23	25
7	no	0.5	5.4	11	..
8	no	1.0	7.0	9.5	11

The New Equipment Problem

In the Commercial Printing Field

By J. W. ROCKEFELLER, Jr.*

**J. W. Rockefeller, Jr., and Associates, Millburn, N. J.*

PART V—The News in Modern Dress

The lot of the pioneer is usually unprofitable and frequently most unhealthful. Christopher Columbus died in obscurity and DeSoto, shortly after discovering the Mississippi, contracted fever and was buried on its banks. The fate of those who comprise the vanguard of business, if less dramatic, frequently indicates a striking parallelism. Unless trail blazing offers satisfaction in itself, being the first of anything is usually a bad risk.

Fortunately, for our civilization and material progress, the urge to explore in the individual is frequently aided and abetted by desperation. Where the large, well established, company is often content to move slowly and with extreme caution, there are smaller, less well financed companies, where rapid progress constitutes the one road to survival. There are other cases where some wealthy entrepreneur from an alien industry, uninhibited by the mores which beset most of us, rushes in where more experienced individuals fear to tread. Occasionally, such a bold frontal attack will result happily and unaccountably in a fair degree of success. In fact, the impression that many of the improvements in the field of printing have come from outside the industry, rather than from within it, is supported by an imposing array of examples.

Cold Typesetting

One of the developments which has recently registered a marked gain is that of cold typesetting. Although their efforts do not constitute the very first attempts at justified typing, perhaps the first permanent gains to be made in this field were by the Varityper Company, under the late Ralph C. Coxhead, and by International Business Machines Co.

When we were engaged on an assignment for the American Newspaper Publishers Assoc. in 1945 we polled the industry to determine its most pressing needs. At that time, forward looking publishers were questioning the necessity for the roundabout and costly method of casting type in hot metal in order to produce the printed page.

In 1949, our firm issued a publication, *Report on the Printing Industry,* composed entirely by cold typesetting. The Coxhead DSJ composing machine and the IBM produced all the composition for this small volume. This was at the time one of a few publications so produced and the reason for using this method was principally for illustration.

Even among offset produced publications, including the Opelousas (La.) *Daily World,* the composition was until recently produced by hot typecasting machines, repro proofs being pulled from these for camera. This roundabout method of producing offset plates was considered necessary, largely because of the fact that composition produced by justifying typewriter had an unfamiliar appearance to the reading public and, more particularly, to the newspaper and magazine publisher. These gentlemen have frequently been guilty of confusing public acceptance with their individual views, views which have generally been colored by years of being in too close proximity to established standards.

By 1955, some of the more daring were producing straight matter, largely by means of the Commercial Controls Justowriter, which offered advantages over some of the earlier methods of cold composition. At that time, our firm published *Printing is a Business,* which was set entirely by Justowriter and Photon. This, as in the case of the earlier publication, was in the nature of an experiment to determine the feasibility of producing camera ready copy on clean machinery in a business office and, subsequently, sending it 1000 miles away for the presswork and bindery without further proofreading. The experiment proved reasonably successful and although we received a few adverse comments on the composition, the book was generally well accepted. The adverse comments were from printers who were operating slug casting machines. In the final analysis, their objections appeared to be to something strange, rather than to something inferior.

Weekly Newspaper's New Role

Meanwhile, the weekly newspaper was beginning to be a factor in the publishing business. People were moving from large cities to

(*Continued on Page* 86)

ANPA MACHINIST PROBLEMS BULLETINS ARE AVAILABLE

ANPA Mechanical Dept. Manager Richard E. Lewis has announced that copies of Mechanical Bulletin No. 626 are available for the asking. This bulletin is entitled *Part XI—Machinist Problems.* This 20 page report contains addresses delivered and discussions taking place at the Machinist Session, ANPA Mechanical Conference, Chicago, June 1957.

The four addresses delivered were: *Casting Sans Serif Type Faces for Classified Columns; Teletypesetter Operation at South Bend (Ind.)* Tribune; *Machine Parts Cost System,* and *Clear Type Faces on Display Slugs.* In addition to the addresses, much valuable technical information is given in the report.

Executives and machinists of member ANPA newspapers may secure copies by addressing Richard E. Lewis, ANPA Mechanical Dept. Manager, 370 Lexington Ave., New York 17. N. Y.

Good Stereo Plates Are Not Accidental

By **FERD A. MIER***

**Stereotype Supt.*, Detroit Free Press. *Address delivered before the Pacific Newspaper Mechanical Conference, Portland, Ore., August* 1957.

At the Detroit *Free Press* we have adopted an approach—not new, not startling—to the problems involved in both production and efficient use of skilled manpower in the stereotype department.

It is our belief a newspaper is a manufactured product. Cost, production, and quality controls are as essential to the manufacturing operation of a newspaper as they are in the production of automobiles, shoes, or television sets. I will touch upon only some of the applications we have made in the stereotype department. This belief and approach is a vital part in all of our mechanical departments and is a necessity, we believe, in any newspaper regardless of its size.

The physical layout of our stereotype department is like many others—the department is on two floors. The job and molding rooms are on the third floor, the foundry is in the first basement, adjacent to the pressroom. This is not an ideal arrangement for the best utilization of skilled manpower and modern equipment.

We have been able to provide a fairly straightline work flow within the department by the use of conveyors and gravity drops. In this way, the usual handicaps found in a split department have been minimized. Our molding and job room equipment has been arranged, rearranged and re-rearranged during the past 10 years. Each time the relocation of equipment was made in the interests of efficiency and better production, with less effort on the part of the men.

Full cooperation was sought from the men in the department by using scaled drawings and templates showing the proposed layout and actively seeking their ideas and criticisms. The result has been to provide a department the men feel they have had a part in planning and a department layout that is highly efficient and productive. As a consequence, our personnel has a better sense of belonging, is happier, and in general does a superior job.

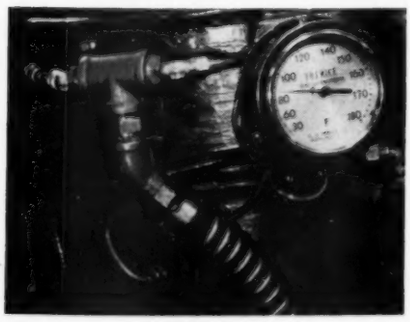


Fig. 1.

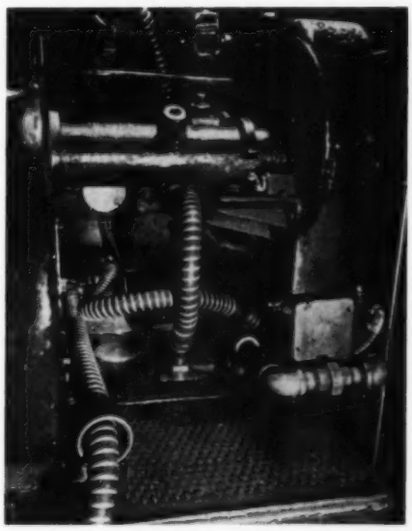


Fig. 2.

Must Now Use Automatic Means

We have always had the ingrained concept that it is necessary to produce a clean, well printed paper. However, we are only too well aware of the rising tide of costs and the rapid ebb of profits. No longer can our departments be content to meet schedules and add manpower for increased work loads. The use of automatic equipment to augment skilled personnel wherever practical is a necessity in today's newspaper operation.

An example is the plate delivery conveyor system installed in 1953. With this automatic equipment we can deliver the products from four Automatic Autoplates and Tensionplate Shavers to a single conveyer every 60 sec. Normally this operation would regularly require two skilled men.

The shavers have been arranged in a fan shape converging on a single conveyor. The fan shape arrangement of the shavers has proved practical as well as saving a great deal of valuable space.

Our operation has benefited immeasurably from the use of quality control instruments. Some of these devices are familiar to the Graphic Arts industry while others are universal in application to many industries. We have developed standards for our operation and maintain a constant check at various points in the operation to insure rigid adherence to these standards.

Most of these devices are familiar to all of you. Possibly you think of them as tools rather than quality control instruments. Those that we use regularly are:

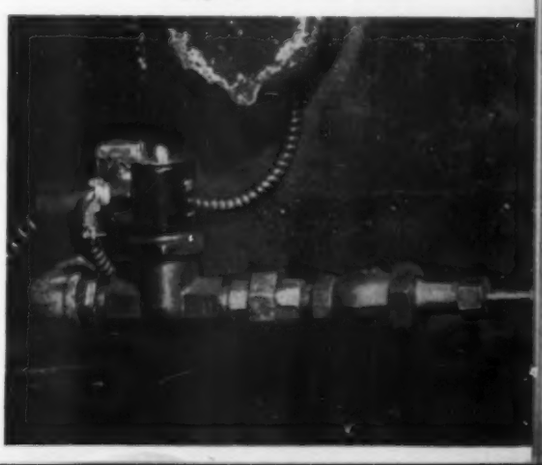
Instruments for Control

Line Gauge—One of the most important control devices for the maintenance of standards we use. How often have you checked the pica gauge on your saw trimmer for accuracy? Or, for that matter, have you ever checked your line gauges for proper calibration? We have found some manufacturers' products to be improperly calibrated.

Type High Gauge—A vital control instrument in any stereotype department. To maintain a difinite standard of height in your operation check it against a master type high block occasionally. The results may be surprising.

Depth Microscope—Another of the really necessary quality control instruments and a rather expensive piece of equipment. Ours repaid the original cost several times during the

Fig. 3.



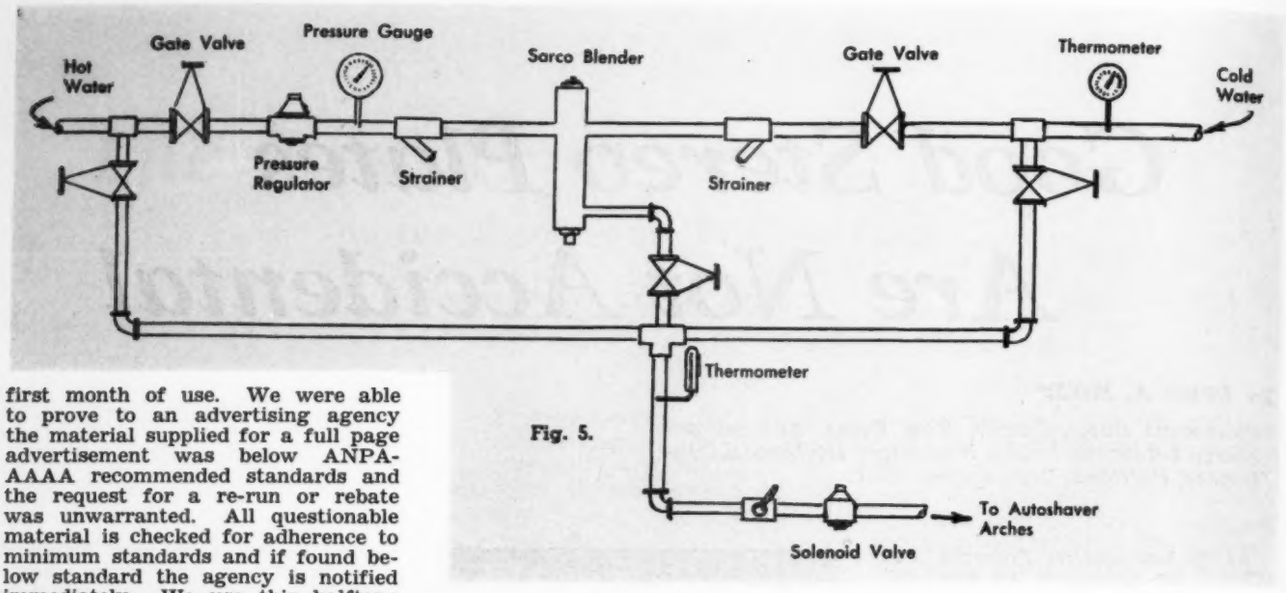


Fig. 5.

first month of use. We were able to prove to an advertising agency the material supplied for a full page advertisement was below ANPA-AAAA recommended standards and the request for a re-run or rebate was unwarranted. All questionable material is checked for adherence to minimum standards and if found below standard the agency is notified immediately. We use this halftone depth gauge for a quick check on engravings. If the depth is on the borderline of our standards we use the depth microscope for an exact determination.

Snap Gauge—This is invaluable for rapidly and accurately determining the thickness of plastic and electrotype plates. The deep throat allows the operator to reach in from the edge a full 3-in. if necessary.

Pocket Snap Gauge—It is used on small cuts and plates where the printing surface extends to the edges of the plate. We also find it extremely

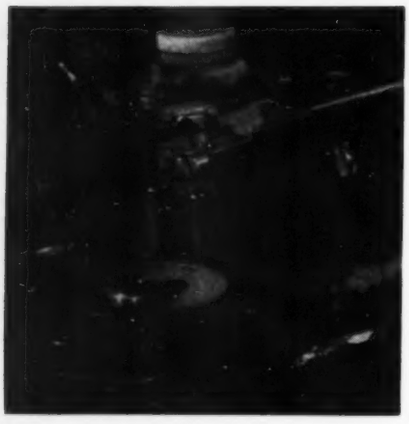


Fig. 4.

useful for checking the thickness of mats.

Three Inch Throat Micrometer—This was originally designed for checking steel sheet material. We have adopted it for checking the thickness of curved stereotypes. We have set a plate standard of 0.439 in. as a micrometer reading which automatically allows for the 0.0015 in. thickness reading due to the inner curvature of the plate.

There are other quality control instruments we use at various steps in the operation. The ones mentioned are those we find the most useful on an every day basis.

Over the years we found we tended to become complacent and self-satisfied with the operational setup and the methods used in the department. Subsequently, we cast a critical eye upon every phase of the operation. Each operation was broken down into separate details and each detail was listed and questioned as to the necessity, purpose, where and when it should be done, and how was the best way to do it.

Work Simplification

The amount of work steps or details we found we could eliminate, combine, rearrange, or simplify were little short of astounding. In some instances, new methods were instituted and new materials were used. Wherever this was done the men working on the operation were consulted and thoroughly briefed on the new methods and the use of new materials.

It was not unusual to receive invaluable suggestions from the men which insured success of the operation.

Studies Have Paid Off

The studies of methods and materials is of necessity unending. The study of type metal structure and cooling cycles has been a continuing project for over five years. The application of certain information derived from this study has been beneficial in the development of operating controls for the casting boxes. Temperature and water flow controls that we previously used were radically modified. As a result of these modifications, plate porosity has been greatly reduced. Surface temperature on the matrix side of the casting box jacket is being maintained within closer limits than were previously attained. Plate quality has been generally improved.

Autoplate Controls

The modification of water flow on the Automatic Autoplate and the temperature control arrangement are interlocked.

In Fig. 1 is shown the upper part of the casting box jacket with the modifications for water flow and the water temperature indicating gauge. Shown is the supply or inlet side of the water line. Two additional inlets were installed at each top corner of the jacket as well as using the former outlet opening. The water temperature at the middle of the jacket water chamber is registered by the gauge.

In the lower section of the jacket (Fig. 2) is shown the discharge side of the water supply. Water is discharged at this point (actually it's the former inlet) and the discharge line is carried to and through the frame here.

In Fig. 3 the heart of the water temperature system is shown. This valve is used to meter and control the discharge flow and to maintain the temperature of the water in the jacket at the desired degree. This electric solenoid valve operates from the pump control handle and acts as an *on* and *off* control. When the control handle is pulled out the valve is open. When the handle is pushed in the valve is automatically cut off and water flow ceases. This, incidentally, maintains the jacket full of water during the period of mat change or non-operation. The discharge line is then carried around the end of the frame and to the normal discharge connection in the base of the machine frame.

Indicated in Fig. 4 is the method

(*Continued on page* 85)

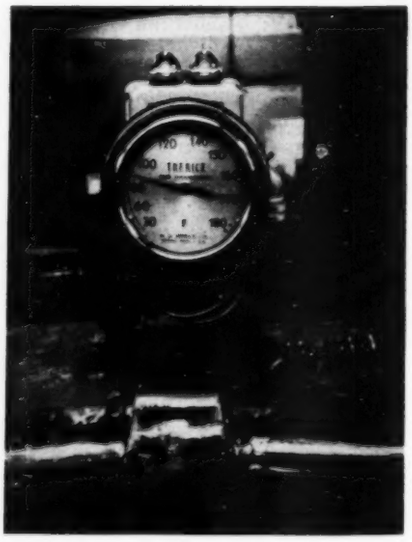
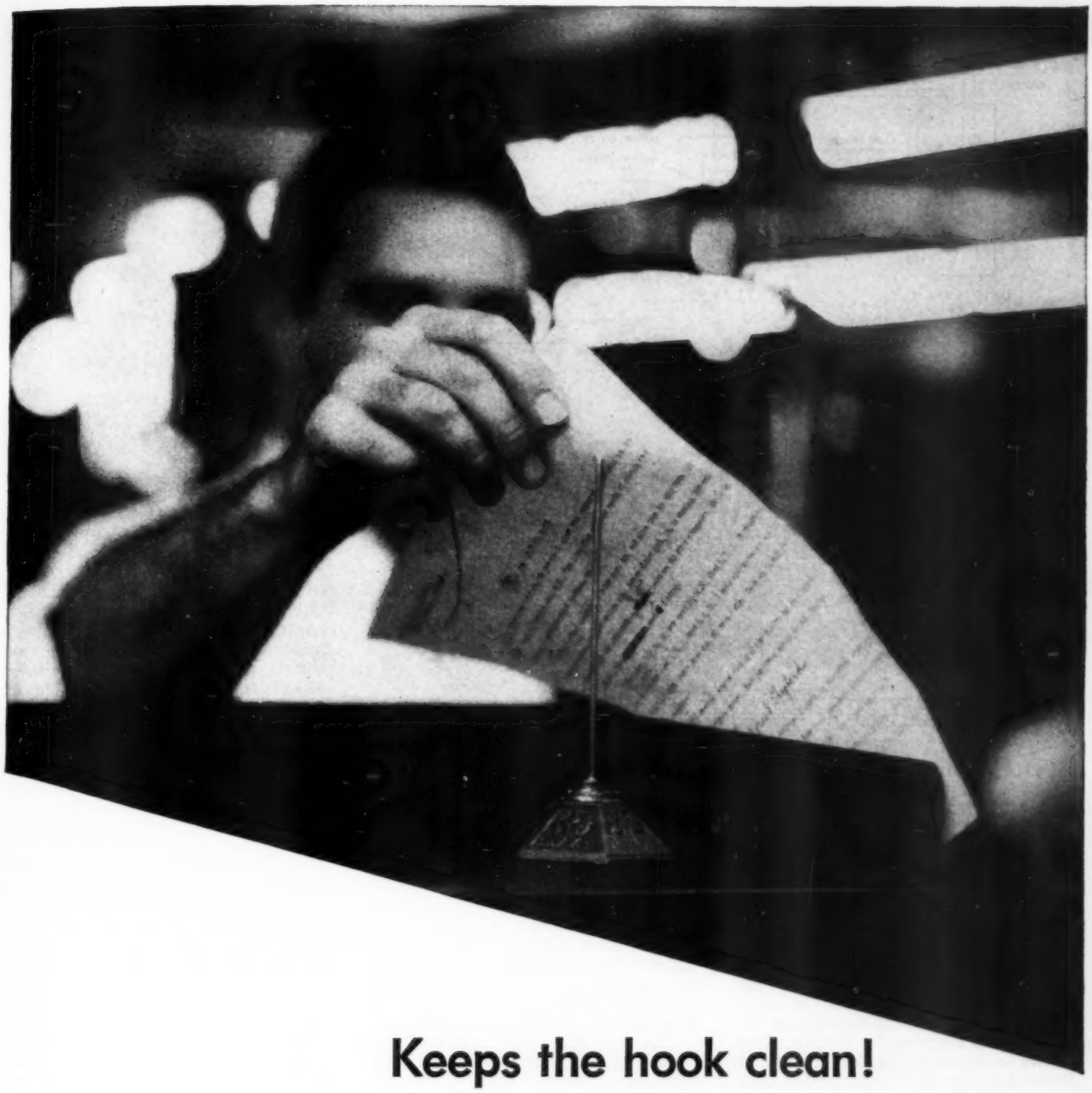


Fig. 6.



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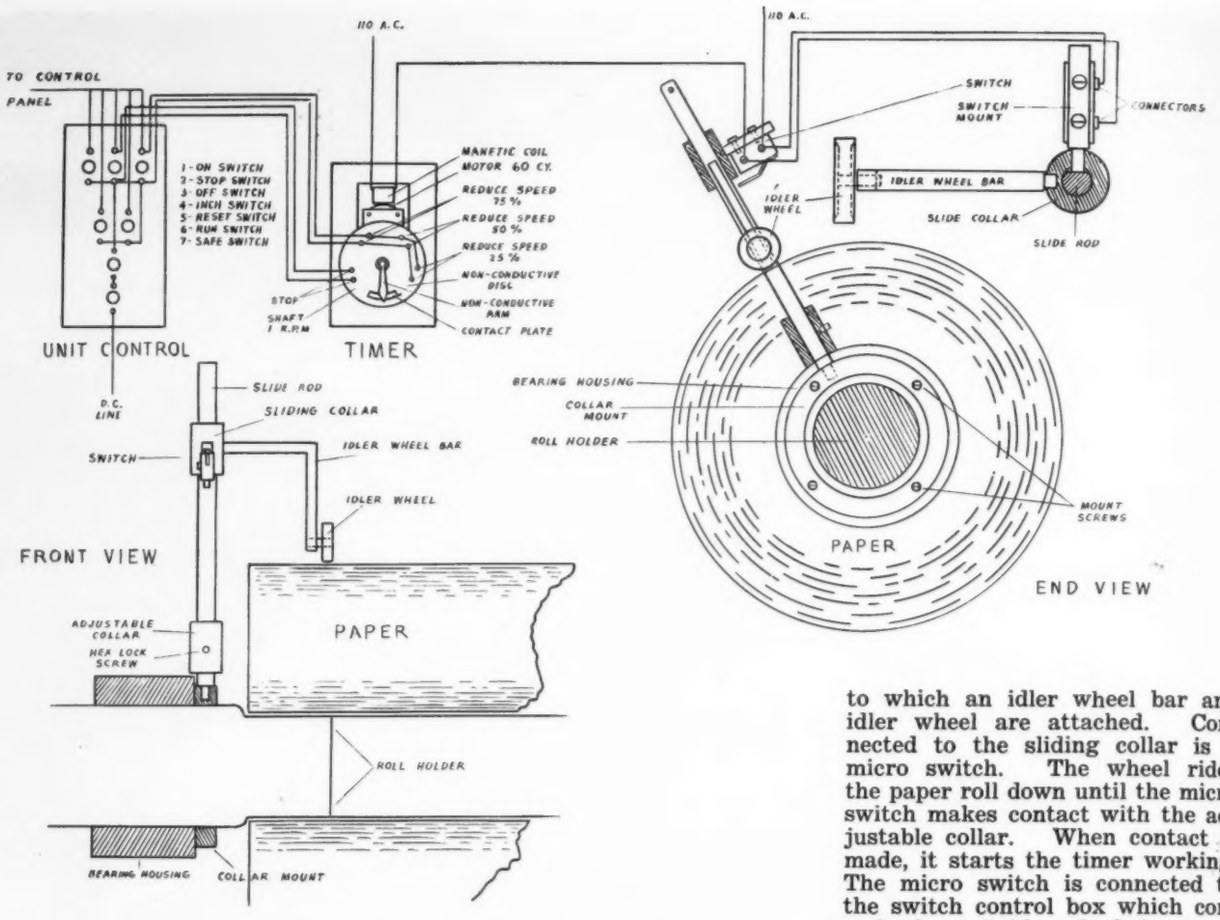


Pair Develops Newsprint Saver

A device designed to eliminate the guesswork in running down a roll of paper has been designed by Robert L. Thompson, press foreman of the Charleston (W. Va.) *Daily Mail,* with collaboration of Electrician Andrew N. Yerrid. The device announced in the *American Pressman* has been named the Automatic Paper Saver on the basis of its function in slowing and stopping the press at a predetermined point based on a specific amount of paper on the roll.

Thompson has installed the device on a Scott press with Kohler reels at the *Daily Mail* and reports good results with it. The plant is averaging about 1 lb. of paper left on each core. The inventor claims the control can probably be used on any roll fed press that must be stopped or slowed to crawling speed for roll changes.

The following description of the device accompanied the drawing reproduced here.

"The device consists of a stationary rod fixed to the end of the reel. There is a sliding collar to which an idler wheel bar and idler wheel are attached. Connected to the sliding collar is a micro switch. The wheel rides the paper roll down until the micro switch makes contact with the adjustable collar. When contact is made, it starts the timer working. The micro switch is connected to the switch control box which controls the switchboard of the press. The timer arm's first contact reduces the speed of the press 25%; the second, 50%; the third, 75%, and the fourth shuts off the press. Once the adjustable collar is set to correspond with the running speed of the press, there are no other adjustments necessary. Any electrician should be able to hook one up and any pressman can time it."

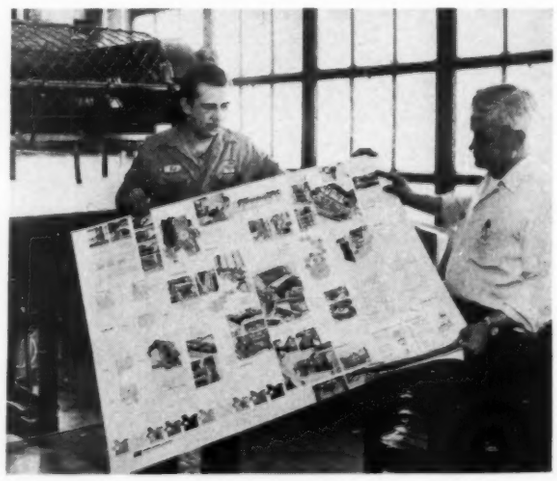
Thompson, who developed the device in partnership with Electrician Yerrid, is in the process of obtaining a patent. Thus far the device is not being commercially produced. The estimated cost has been set at $175 for the control when it is available.

Typo Specialist Gives Talks

Edmund C. Arnold, typographic specialist for Mergenthaler Linotype Co., appeared before editorial press groups in four widely-scattered locations during the two week period of Aug. 29 to Sept. 13. The typographic sessions took him to Boston, Alabama, Canada, and South Dakota.

During the months of October, January and March, Arnold will address six groups in Michigan, South Carolina, Indiana, and Connecticut. He is editor of *Linotype News* and author of *Functional Newspaper Design. He will speak on type faces, page makeup, and other design subjects.*

New Harris Book — One copy of a new two-color, 16 page features book about the Harris 14½ in. by 20½ in. offset job press will be produced from this sheet, printed on a Harris 35 in. by 45 in. offset press. Features available in the Model 120 press are illustrated and the working elements are described. Also included are specifications and floor plan diagrams. Shown here examining the sheet are Eddie M. Strand (left), pressman, and Walter F. Trempler, general superintendent, Crane-Howard Lithograph Co., Cleveland.



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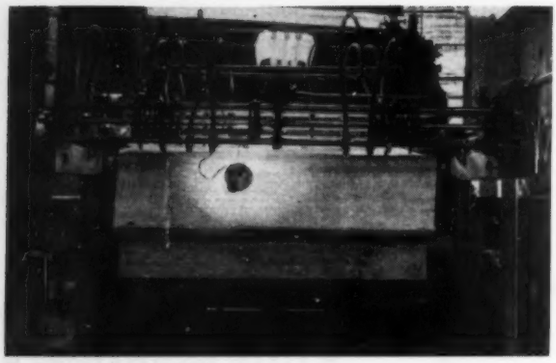

An infrared lamp is shown here attached to the feeder of a Harris offset press at Methodist Publishing House, Nashville, Tenn. Heat from lamp takes some moisture out of sheet to improve feeding.

Sheet Feeding Improved By Use of Infrared Lamps

Infrared lamps, attached to the framework of feeder units on printing presses and folding machines, are being used effectively at Methodist Publishing House, Nashville, Tenn., to provide better sheet feeding. The 250 w. General Electric infrared lamps may be obtained in most hardware or drug stores.

As shown in the illustration, the lamp is positioned to transmit heat against the outer edges of the paper stock in the feeder. This application reduces moisture in the sheets and helps eliminate static electricity which may be present. If the relative humidity is excessive, it is sometimes necessary to hook up a second lamp to cover with heat a larger area of the stock. In another application of these lamps at MPH, pressmen position the lamp against the edges of paper stock on the floor before loading into the feeder.

In other news from Methodist Publishing House, the firm has recently completed a two-story addition to its printing plant which provides approx. 4000 sq. ft. more floor area. There are plans, also, for installing a Harris 43 in. by 59 in. five color offset press. R. G. Graham is vice president and director of manufacturing.

Du Pont's New Film Base Ready for Graphic Arts

Cronar polyester photographic film base, developed by E. I. du Pont de Nemours & Co., is making its commercial debut this year according to a story appearing in *Du Pont Magazine*. The new base, which Du Pont claims combines strength, durability and resistance to shrinking and stretching, has been 10 years in the research and development stages. Cronar has important Graphic Arts applications.

Photolith Ortho A lithographic film and Du Pont masking film for use in color correction are among the first in the Graphic Arts line to be converted to the new base. An unsensitized Cronar base also is available for use in stripping and layout support.

Referring to the Garphic Arts, Du Pont states: "In an industry where sensitized glass plates have been used to maintain the necessary dimensional accuracy, the new materials on Cronar offer ease of handling and a stability to temperature change approaching that of glass."

Some of the claims for Cronar base are: It has one-third the tensile strength of steel; it will withstand 15,000 foldings and refoldings before it breaks; it is about six times more dimensionally stable than acetate to temperature and humidity changes; and it has a safety base to safeguard against fire hazard. For further details, circle No. 265 on Reader Service Card.

Ad Services Announced

Multi-Ad Services, Inc. announces a new service for newspapers to be known as the Ad-Builder Color System. Maurice L. Tyler, sales manager, advises: "The system is designed to simplify both the selling and mechanical preparation of one color and black ads. An art technique, backed by three years research permits the use of one mat for two color ads. Separation is accomplished on two curved casts made from a single form.

"The Color System embodies the Ready-to-Sell layouts in the Ad-Builder Space Selling System except that ads are ready for presentation in one color and black. Other Ad-Builder techniques are also employed."

The Ad-Builder Color System begins monthly publication with the Oct. 1957 issue. Circle No. 264 on Reader Service Card.

Changes Company Name

International Color Corp., Daytona Beach, Fla., because of an inadvertent conflict of name with International Color Gravure, Inc., New York, N. Y., has changed its name to World Color, Inc. Pending completion of a new Daytona Beach color processing plant, World Color, Inc. is temporarily located in West Nyack, N. Y.

Offset Gains Reported by PIA

A steady increase in offset printing by members of Printing Industry of America is shown in the 1956-57 PIA Ratios.

The new Ratios show a substantial increase of 12.60% in sales volume by all reporting firms. Plants predominantly letterpress increased their sales by 10.76%, while those predominantly offset increased their sales by 14.93%. This difference largely accounted for the shift in the proportion of offset sales, from 37% of the total last year, to 41% this year. Significantly, the number of plants predominantly offset also increased from 28% last year to 31% of total plants this year. The entire report covers 701 plants with sales volume of $599 million produced by 44,000 employees.

A steadily growing trend toward combination plants is shown by the facts reported by 325 plants in PIA's recent Depreciation Survey. Total equipment represented in the survey was in excess of $100 million of cost, with pressroom equipment representing $54 million, well above half. Of the total firms reporting, 6 out of 10 were combination plants, and of their total pressroom equipment, 59% was in letterpresses and 41% in offset presses.

Plants predominantly offset, represented in the PIA Ratios, continue to show a slight edge in profits too. For the past three years the comparative figures reported are these:

	Profit on Sales Before Income Taxes	
	Letterpress	Offset
1954-55	6.27%	7.51%
1955-56	6.18	6.59
1956-57	6.80	7.03

In response to this increasing trend toward offset printing by its members, PIA recently appointed George A. Mattson as director of lithographic services. A complete breakdown of the 14 major manufacturing expenses, the six Administration and six Sales expense items, for offset plants, is given in the 1956-57 PIA Ratios. Copies are available to PIA members from their local association, or directly from Printing Industry of America, Inc., 5728 Connecticut Ave., N. W., Washington 15, D. C.

PATENTS
For The GRAPHIC ARTS

Covering patents issued July 2, 9, 16, 23 and 30.

All new patents for the Graphic Arts are reported exclusively for *Printing Equipment Engineer* by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc. presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. *Printing Equipment Engineer* is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Composing Room:

MODIFICATION OF TYPE CONFIGURATIONS

Erect characters, as in the Roman style, can be optically distorted to produce slanted or italic style characters. This modification can be effected in photocomposing machines of the general type covered by patent 2,736,249. Patent 2,797,613 by Rene A. Higonnet and Louis M. Moyroud, assigned to Graphic Arts Research Foundation, Inc.

TYPE COMPOSING APPARATUS

For storing information in connection with type composition, this register or memory device includes storage devices which are adapted to assume a number of stable conditions to represent selective keyboard operations, selector devices under the control of the keyboard for writing, or altering the condition of the storage devices according to the keyboard operations. Reading devices detect the stored information and make it available to other units for transcription or production of justified lines of characters. Patent 2,797,787 by Rene A. Higonnet and Louis M. Moyroud, assigned to Graphic Arts Research Foundation, Inc.

AUTOMATIC LINECASTING AND COMPOSING MACHINES

Mixing is automatically performed in record controlled linecasting and composing machines by means of a simple character that is coordinated with the normal operating characteristics of a conventional machine such as the Model 29 sold by Mergenthaler Linotype Co. Patent 2,797,797 by Ernest R. Gutzmer, assigned to Intercompany Corporation.

PRINTER'S COMPOSING UNIT

With this work surface unit, space and time are saved in the making up of type forms for newspapers or job printing. Any one of several work surfaces can be reached from one position. It has slides bearing rollers, and the work surfaces are of wood construction. Patent 2,797,925 by Arthur R. Hawke.

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Platemaking:

METHOD OF MAKING PRINTING PLATES

A laminated printing plate of light weight and thin uniform structure is prepared by a lamination process. The plate has a metal backing and does not require shaving to obtain the proper thickness prior to installation on the press. Patent 2,800,856 by Robert R. Myers, Jr.

ETHYLENE-VINYL CINNAMATE COPOLYMERS

The light sensitivity of these polymers may be utilized to form resist images on supports for

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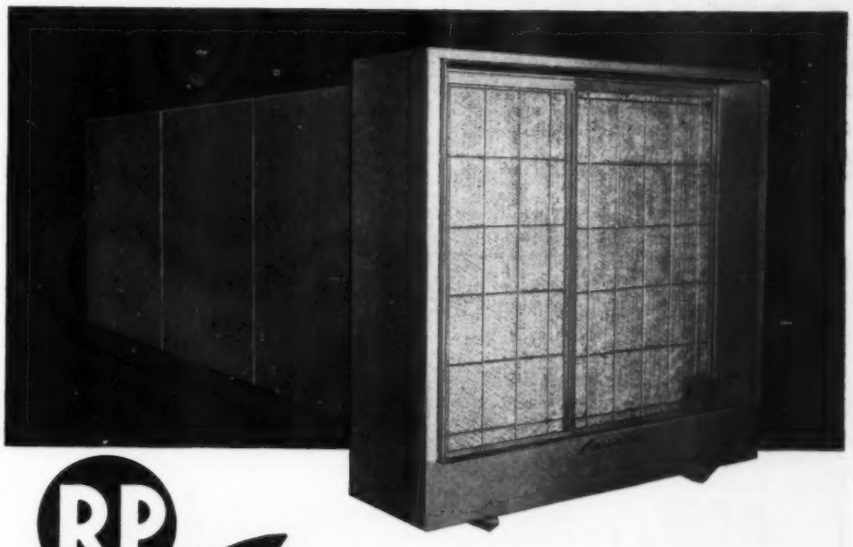


RP Aprilaire

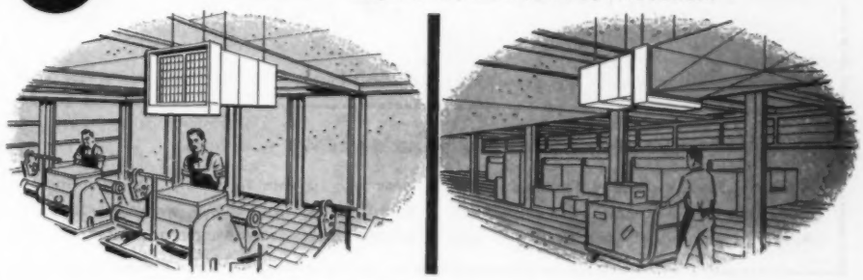
AUTOMATIC-ELECTRIC HUMIDIFIER

Designed on an entirely new principle of humidification, Aprilaire Industrial Humidifiers constantly, accurately provide and maintain the exact humidity required . . . reducing static electricity and eliminating the many problems accompanying the curling of paper stock because of excessive dryness. Recordings of an installation in a 72,000 sq. ft. printing plant during a 24 hour period, with a humidistat setting of 31%, show the relative humidity range held between 27% and 34%, despite an outside temperature change from 35° to 0°.

Important Features—HIGH CAPACITY (unit sizes up to 10 gallons per hour); POSITIVE CONTROL (introduces humidity as needed—only when needed without lag or over-run); FLEXIBILITY (for gas, steam or hot water heat source); MINIMUM MAINTENANCE (the only liming occurs on inexpensive, replaceable evaporating elements); ISOTHERMAL OPERATION (has no temperature effect on humidified air); BACTERIA REMOVAL (the Aprilaire's unique method of humidification provides an important plus feature—up to 70% of all bacteria in air stream passing through unit is removed).

RP . . . PRODUCTS OF RESEARCH

RESEARCH PRODUCTS Corporation
Dept. 917, Madison 10, Wisconsin



For More Information Circle 149 on Reader Service Card

printing plates. Such a polymer may contain 2 to 50 mol percent of recurring ethylene units and from 98 to 50 mol percent of recurring vinyl cinnamate units. A layer of the polymer on support is exposed to ultraviolet light under a subject for a period sufficient to insolubilize the polymer in exposed regions, after which the unexposed regions are washed away to leave a relief image. Patent 2,801,233 by Louis M. Minsk and Cornelius C. Unruh, assigned to Eastman Kodak Co.

COPYBOARD VACUUM ADAPTER

This copyholder holds transparent flexible sheets in an optically flat plane to be photographed. The adapter or holder has vacuum holes, the outline of which phases out completely when photographed. The objections of the previous suction devices of patents 627,069, 2,570,688 and 2,694,337 have been entirely eliminated. Patent 2,799,205 by Joseph G. Bacsik, assigned to Chance Vought Aircraft, Inc.

COPYHOLDER

For use with photographic equipment of large size, this copyholder has a generally flat construction with a number of frames and it is pivotally secured on a horizontal axis. Both opaque and transparent copy can be firmly and accurately retained in position for copying. Patent 2,799,204 by Delbert T. Blatherwick, assigned to Robertson Photo-Mechanix, Inc.

PLANOGRAPHIC PRINTING PLATES

The litho surface of this plate is coated with a polyphase system comprising a water-receptive material as the continuous phase and an ink-receptive water repellent material as the dispersed phase. Liberation of the ink-receptive material by impact provides the imaged portion. Special ribbons, solutions, crayons and smudging are eliminated. Patent 2,800,077 by Thomas U. Marron, assigned to A. B. Dick Co.

PROCESS OF FOUR COLOR PRINTING

Blocks, offset plates, intaglio cylinders and plates for four color printing consist of an arrangement of dots in square basic nets of a same color, the symmetry of which makes mutual angles of 30 deg. and dots of a fourth color are arranged in a hexagonal basic net, the symmetry of which makes angles with the other three symmetry axes of 15 deg., 45 deg., and 75 deg. respectively. The dot distance of the fourth color is between 1.5 and 2.5 times the dot distances of the other colors. Patent 2,798,428 by Daniel Tollenaar, assigned to Stichting Instituut voor Grafische Techniek T. N. O.

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Feeding, Folding, Delivery:

FEEDING, COUNTING AND STACKING MECHANISM

Books or magazines are received from a gathering machine and are arranged and fed in alignment along a conveyor system. They are counted and collected in stacks of a predetermined number and delivered to a packaging station. Patent 2,799,212 by William H. Taylor.

FEED DRUM ADJUSTING MECHANISM

This relatively simple invention may be incorporated in existing collating machines. It compensates for misalignment of the feed pins with respect to the moving web, and changes relative rotation of the shaft and drum while the machine is in operation. Patent 2,799,498 by Augustus J. Richards, assigned to Bonnar-Vawter, Incorporated.

PNEUMATIC SHEET SEPARATING AND FEEDING

This construction provides for limited downward movement of the sheet separating mechanism in the handling of lightweight sheets and unlimited downward movement in handling cardboard or similar heavy materials. Single feeding is assured, and the mechanism can be installed in existing sheet feeders. Patent 2,799,499 by John R. Perry and Leo C. Williams, assigned to Miehle-Goss-Dexter, Inc.

ASSEMBLY AND FINISHING DUPLICATING FORMS

In preparing multi-layer webs, a steady and uniform feeding of the collected webs is assured by adjusting the speed of the grid of slats of feeding table or conveyor so as not to exceed the smallest of the peripheral speeds of the drafting rollers for the separate webs. This also avoids tearing holes in the web by the feeder pins. Patent 2,800,325 by Josef Burgmer.

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Printing Presses:

INDICATOR FOR PRINTING PRESS

The device visually indicates, while a press is in operation, the accuracy of the longitudinal spacing of impressions made on a continuously traveling web of paper. It not only indicates any error in impression spacing, but also the direction and magnitude of the error. Patent 2,797,610 by Life Coakley, assigned to Bemis Bros. Bag Co.

AXIAL ADJUSTMENT OF ROLLERS ON PRESSES

An electrical control is positioned on a composition roller of a printing press so as to enable adjustments to be made of the revolving cylinders or longitudinal rollers of rotary printing presses. Patent 2,800,649 by William E. Featherly, one-half assigned to John Burgio.

APPARATUS FOR TREATING WEBS

Webs of paper to be dried are guided through a heating oven in which their positions with relation to heating elements can be adjusted to avoid damage to the paper. The path of web travel is arcuate at all times and festooning is obviated. Patent 2,800,725 by Floyd A. Holes, assigned to the Dobeckmun Company.

AUTOMATIC PLATEN PRINTING PRESS

To prevent damage to a press in case of a bearing breakdown during operation, the ball

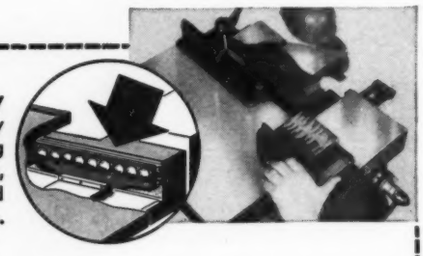

Table glides effortlessly on 18 steel ball-bearings. The only mechanically correct way of carrying work to the blade, the ball-bearing, easy-gliding table is a standard COST-CUTTER feature.

NOW... ball-bearing tables on all Cost-Cutter Saws

Yes! The ball-bearing, easy-gliding table, most-wanted feature a saw can have, is now standard on all Cost-Cutter Saws. But that's just *one* of the reasons you get faster, smoother service with today's Cost-Cutter Saws.

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PATENT SEARCHES

For Patent Research in the U.S. Patent Office, or a prompt estimate on any type of search, write

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bearings are disposed fixedly, e. g., with their inner rings not adapted to rotate or slide upon the spindle ends of the distributing rollers. Patent 2,797,640 by Arthur Buttner, assigned to Schnellpressenfabrik Aktiengesellschaft Heidelberg.

SPEED-CONTROL SYSTEMS FOR WOUND ROTOR MOTORS

In motors for printing press drives, there has long been a need for reliable, stable speed control over a wide and stepless speed range. A relatively simple and small system is here described in which the speed regulating and stabilizing intelligence voltages are electrically derived from the energy of the motor circuits themselves. The same induction motor is used for both normal speeds and for inching. Patent 2,798,193 by Herbert R. Behr.

FEED GUIDE FOR PRINTING EQUIPMENT

A feed board having a very smooth surface is combined with novel feed guide units having suction cup portions adapted to adhere by suction to the slick surface of feed board. This makes it possible to use a single board for a long period of time. The feed board is for use in an embossing press. Patent 2,800,078 by Salvador Lightbourn.

MOLLETON ROLL FOR LITHOGRAPHIC PRESSES

The press has a single moistening roll and a single inking roll. The moistening roll is in the form of a rigid imperforate cylindrical tube having a porous fabric cover which permits capillary flow of liquid to replenish moisture. The inking roll is adapted to carry a supply of ink on its surface sufficient to permit printing for a long period of time. Patent 2,800,855 by Clarence L. Claff and Carl A. Moeller, assigned to M. B. Claff & Sons, Inc.

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Binding, Cutting, Perforating:

LIGHT INTERRUPTING MEANS FOR PHOTOELECTRIC CONTROL SYSTEM

The circuit controls an automatic back gauge spacing mechanism which moves the back gauge at successive individually predetermined intervals after successive cuts. The circuit is useable on cutters having back gauges, cable attachments, and machines covered by patents 2,628,680, 2,053,499, 2,687,011 and 2,574,501. Patent 2,798,967 by Frederick W. Seybold and Nicholas Herman, assigned to E. P. Lawson Co., Inc.

BOOK JACKETING MACHINE

Books of different or uniform sizes may be fed to and through this machine where they are automatically handled and supported while being covered with paper jackets. The books are fed into the machine intermittently. The only duties of an operator are to place a stack of books at the front of machine and remove the covered stack from the rear. Patent 2,799,029 by Carl Schramm, assigned to The Smyth Manufacturing Co.

BOOK STITCHER LOOPING MECHANISM

In this cyclically operable machine the control mechanism simultaneously operates the tape looping mechanism to form downwardly extending tape loops. Successive book signatures are fed to a stitching position with their backs facing upwardly and then beyond said position along a signature guideway and tapes are fed to lie transversely across the backs of the signatures. Patent 2,800,095 by Carl Schramm, assigned to The Smyth Manufacturing Co.

PAPER CUTTER BACK GAUGE MOUNTING

This assembly is simple to make and use. It comprises a table with back gauge movably mounted on its upper surface over a slot which accommodates a guide connected to the back gauge mounting. A hand crank operates the device. Patent 2,799,338 by Freeman Barney and Michael E. Paponoli, assigned to The Challenge Machinery Co.

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Miscellaneous:

MOUNTING FLEXIBLE ASSEMBLING FORMS ON PRINTING CYLINDERS

Flexible foils of artificial material serving as patterns are assembled on intaglio copper cylinders from a table, the upper surface of which, adjacent the cylinder, has a plurality of transverse channels at its upper side facing the assembling form. A low pressure is maintained on table for rendering the artificial material antistatic. Patent 2,798,029 by Robert Kaulen.

Saw Accidents Cut Profits

Safety as a profit builder was stressed in an address by Daniel Blackstone, president, Brett-Guard Co., delivered recently. He pointed out that management has awakened to the fact that to reduce accidents is to reduce production costs, and to reduce production costs is to increase profits by the same margin.

Now that Magnesium has proved its superiority—

Popularity focuses on Magplate for accuracy, uniformity, easy sawing and routing, hard surface, and clean bottom.

You may be one of the many progressive photoengravers who have swung over to magnesium metal for line etching, half tones and combinations.

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Equipment

Sales and Installations

Reports

ATF Installations

American Type Founders Co., Inc. reports the following installations:

ATF Chief 29 *Offset Press*—Julius Blumberg, Inc., New York, N. Y., one press; Manhattan Litho Corp., New York, N. Y., one press; Mar-Sel Litho & Printing Co., New York, N. Y., one press; and Scott Lithographic Corp., New York, N. Y., one press.

ATF Chief 20 *Offset Press*—Edgcomb Steel & Aluminum Corp., Hillside, N. J., one press; Commerce Photo Print Corp., New York, N. Y., one press; Garber Pollack Co., New York, N. Y., one press; and Harding & Heal, Inc., New York, N. Y., one press.

ATF Chief 15 *Offset Press*—Diamond Star Printing Co., New York, N. Y., one press; Fawcett Publications, Inc., Greenwich, Conn., one press; Commerce Photo Print Corp., New York, N. Y., one press; Phipps Press, Baldwin, N. Y., one press; Consolidated Merchants Syndicate, Inc., New York, N. Y., one press; A & S Offset, Brooklyn N. Y., one press; and Dynamic Litho Press, New York, N. Y., one press.

ATF C Kelly Letterpress—Apostleship of Prayer, Bronx, N. Y., one press; and Standard Print, Inc., Bridgeport, Conn., one press.

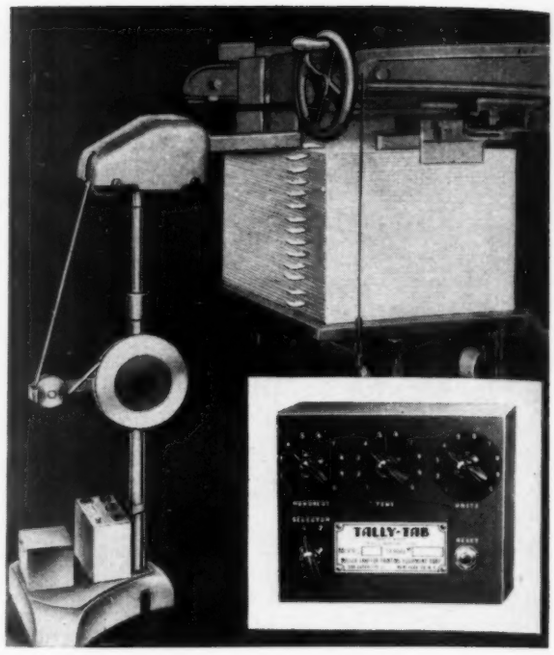
ATF Chief 22 *Offset Press*—Ace Letter Service, Newark, N. J., one press.

Super Chief Offset Press—Lou-Art Offset Co., New York, N. Y., one press.

Cameras—M. M. Caruso, Jersey City, N. J., Vertical #18 Kenro Camera; Tri-State Litho Service, Newark, N. J., ATF Craftsman 241 Camera; and Wilson Jones Co., Elizabeth, N. J., ATF Craftsman 241 Camera.

What is claimed to be the most modern web-fed offset press in England is now producing the *Reader's Digest* and other publications at the Hazell, Watson & Viney plant in Maidenhead. The ATF web-fed offset press is used to print a length of 22¾ in. of one or two colors at each revolution, the web width being variable up to 35 in. Both 16 page and 32 page signatures may be produced on the

Pre-Determined Counter—The Miller Lauffer Ptg. Equipment Corp. has introduced the Tally-Tab 1000, which includes the same features found in previous models with the addition of a new predetermined counter. Counter enables instantaneous selection of any count from 1:1000 and automatic recycling when pre-determined count is reached. Counter is plugged into base. The inserter head can be adjusted to any height from 34 in. to 54 in. and feed channel can be positioned to reach the smallest sheet at any point on the delivery skid. Makeup switch allows operator to subtract any number of sheets for inspection. Unit is portable. Circle No. 256 on Reader Service Card.



Lawson Installations

E. P. Lawson Co., sub. of Miehle-Goss-Dexter, Inc., has announced the following installations of Lawson cutters and Lawson multiple head drilling machines:

Lawson 55 *Series V-65 Cutter*—National Envelope Corp., San Francisco, Calif.

Lawson 52 *Series V-65 Cutter*—Boorum & Pease Co., Brooklyn, N. Y.; and Washington State Printing Plant, Olympia, Wash.

Lawson 46 *Series V-65 Cutter*—Boorum & Pease Co., Brooklyn, N. Y.

Lawson 39 *Cutter*—Goss-Valentine Co., Inc., Chicago, Ill.; and Western Electric Co., Kearny, N. J.

Lawson Model S multiple head drill—The Federbush Co., Inc., New York, N. Y.; J. L. Hammett Co., Inc., Cambridge, Mass.; Railroad Retirement Board, Chicago, Ill.; and F. L. Russell Corp., Saugerties, N. Y.

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CHESHIRE labeling machines do your labeling job and do it *100% right* at speeds up to *18,000* an hour. Not only do they save you money, but Cheshire automatic labelers make your magazines, catalogs, booklets, etc. look better because each label is affixed in a uniform manner . . . creates a favorable impression for your company.

Cheshires can now be supplied with automatic town separator device.

Models available from $3,000.

Write today for details on the Model PT.

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Harris-Seybold Presses

Installation of what is claimed to be the largest combination of sheet fed lithographic presses ever built in this country for commercial use was completed recently by the Harris-Seybold Corp. at the plant of Eastern Colortype Corp., Clifton, N. J. The equipment consists of a five color 77 in. press backed by a two color press of the same dimension. Each of the companion presses can be used to produce as many as 64 pages of a 9 in. by 12 in. book in one run. On large quantity jobs, each press is made to print one side for half the run, and then presses are switched for the remainder of the run. The five color press, which is 53 ft. 6 in. long and 16 ft. 3 in. wide, is equipped to print as many as 20 colors at one time through use of special ink fountain dividers. The two color press, which is 33 ft. 4 in. long and 16 ft. 3 in. wide, can also be used with fountain dividers to run as many as seven colors.

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Intertype Company

In its recent switch to all 11 pica column, the Janesville (Wis.) *Gazette* chose Intertype's 9 pt. Imperial 2B TTS on a 9½ pt. slug. Former column width was 12 picas. For its classified section, the *Gazette* is using 5½ pt. Imperial 1B TTS on a 6 pt. slug.

The Utica (N. Y.) *Daily Press* and the Utica *Observer-Dispatch*, have changed to Intertype's 9 pt. Imperial with Bold for the new 11 pica column format.

The Miami (Okla.) *News-Record* recently installed two Model C4 Intertypes. The machines are equipped with automatic quadding and centering devices, automatic mold cooling blowers, Visilite magazines and Mohr saws. Production is directed by Bill Zimmerman, composing room foreman.

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Linotype Company

Mergenthaler Linotype Co. reports the following installations:

Model 31 *Linotype*—Wapakoneta (Ohio) *News*, Chattanooga (Tenn.) *Times and News-Free Press*, East Point (Ga.) *Atlanta's Suburban Reporter*, Dahlonega (Ga.) *Nugget*, Tupelo (Miss.) *Journal* and McGregor (Manitoba) *Herald*.

Model 5 *Linotype*—The Trail (British Columbia) *Times* and Nelson (British Columbia) *Daily News*.

Linotype Comet—The Trail (British Columbia) *Times*, Coshocton (Ohio) *Tribune*, Greensburg (Pa.) *Tribune Review*, Detroit (Mich.) *News*, and Whittier (Calif.) *News*.

Model 33 *Linotype*—Naples (Fla.) *Collier County News*.

Model 29 *Mixer Linotype*—Los Angeles (Calif.) Times-Mirror Press.

Linotype Rangemaster Mixer Model 35—Cincinnati (Ohio) *Enquirer*, and Navato (Calif.) *Advance*.

Atlanta (Ga.) *Constitution* and the *Journal* have installed 8 pt. Teletype Corona for body face and 5½ pt. Teletype Corona for classified pages.

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Hoe Presses Ordered

An order for three Hoe Color-Convertible press units was announced by the Orlando (Fla.) *Sentinel-Star*. Two color cylinders will permit printing eight or 16 page comic sections with four colors on each side of the web. In addition, the *Sentinel-Star* will be able to run full color advertising on selected pages. The installation will also include three 3-arm paper roll reels with automatic running belt tension and full speed splicing mechanisms, and a double former, double delivery newspaper folder. Included will be four 4-compartment ink pumps.

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Gannett Papers Install

The Gannett Rochester newspaper plant is expanding its mechanical equipment to meet increased production and ROP color printing. Being added to the existing press line are 2 Hoe printing press units. Equipment is also being improved. Mechanical installation is being done by Central Newspaper Installations, Inc., of New York, N. Y., under coordination of Chas. T. Main, Inc., Boston.

Mosstype Appoints New Distributor—Manton Brothers, Ltd. has been appointed Canadian distributor of D-Mount plate cylinders, mounter-proofer machines, rubber design rollers and other products manufactured by Mosstype Corporation.

Literature

(Continued from Page 22)

LEIMAN CATALOG

A 16 page catalog No. 757 descriptive of Leiman rotary positive air and vacuum pumps, gas boosters and air motors has been published by Leiman Brothers, Inc. Included are details of construction, dimensions, capacities, performance curves, and installations. Circle No. 327 on Reader Service Card.

GRAVURE CONVERTER PRESS

A heavy duty gravure converter press featuring walk-in design for accessiblity to operating controls is described in a bulletin offered by Champlain Company, Inc. The press is made for maximum print widths of 44 in. and 54 in. Models accept cylinder circumferences from 20 in. to 40 in. The semi-extended drier for 11 in. web lengths and an extended lacquer drier for 15 in. web lengths are also announced in the bulletin. Circle No. 318 on Reader Service Card.

SCOTT EQUIPMENT

Walter Scott & Co. has issued literature descriptive of its press units, reels, tensions and pasters, folders and other equipment. Circle No. 331 on Reader Service Card.

SHEET CLEANER

J. E. Doyle Co. has published a bulletin concerning its sheet cleaners. Cleaners are claimed to enable full production printing without stops for washups. Circle No. 342 on Reader Service Card.

PLAST-O-DAMP SYSTEM

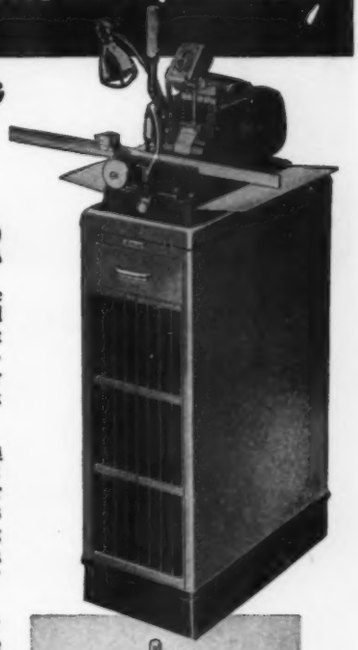
Ideal Roller & Mfg. Co. has issued a four page folder regarding its Plast-O-Damp system of measured moisture. Use of lithographic

DO THE WORK OF HOURS *in Minutes!*

SLASH YOUR PRINTING COSTS WITH THE

Rouse

POWER MITERER



If you need miters in either small or large quantities, no other machine nor method can turn out anywhere near as many perfect joining miters so quickly from strip material. That's how the Rouse Power Miterer can slash your printing costs by doing work in minutes that now takes you hours.

A Rouse Power Miterer won't cost you one cent! Printers the world over say that money paid for a Rouse Power Miterer quickly comes back through tremendous savings in expensive time. After getting your money back, you'll start collecting daily dividends from permanently lower operating costs.

FROM THE SMALLEST JOB SHOP UP TO THE LARGEST PLANT, ONLY ROUSE MAKES A POWER MITERER FOR EVERY TYPE OF USE.

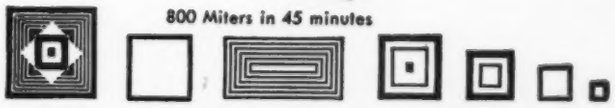
You may buy any Rouse Power Miterer as a bench model or with any other equipment you wish.

Virtually every printing plant in the world uses one or more Rouse products.

NEW ROUSE CATALOG

Write for your copy TODAY!

800 Miters in 45 minutes



H. B. ROUSE & COMPANY

2214 NO. WAYNE AVE., CHICAGO 14, ILLINOIS

ROUSE PRODUCTS — THE STANDARD OF THE WORLD FOR 50 YEARS

MITERING MACHINES
LEAD and RULE CUTTERS
COMPOSING STICKS
TYPE GAUGES
SLUG CLIPPERS
BAND SAWS

For More Information Circle 152 on Reader Service Card

dampening system is said to enable a measured film of moisture to be deposited on the lithographic plate to match the measured film of ink. Circle No. 328 on Reader Service Card.

Bindery

SAXMAYER LITERATURE

National Bundle Tyer Co. is offering literature regarding the Saxmayer machine for tying printed matter. Machine can be automatically or manually operated and jute or sisal, single or cross tie can be used. Circle No. 340 on Reader Service Card.

PAPER KNIVES

Knife blades for all types of paper cutting operations are described in a two color bulletin available from Simonds Worden White Co. Design and construction features are illustrated and explained. Diagram is used to show knife edge bevels recommended for general purpose cuttings as well as for hard, medium and soft paper and other materials. Circle No. 320 on Reader Service Card.

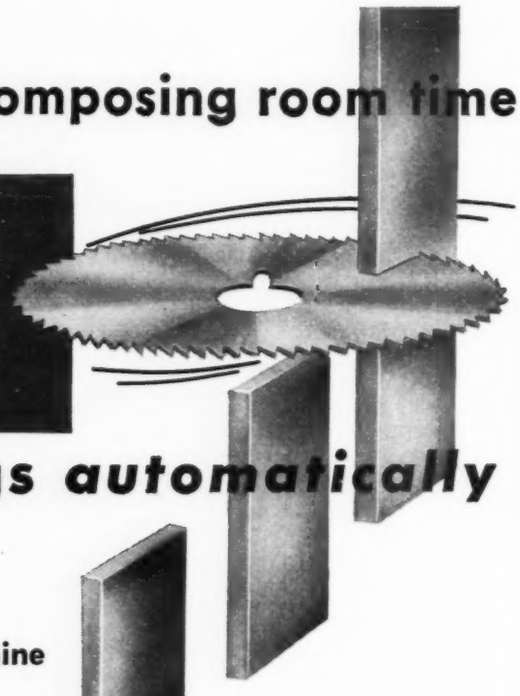
Miscellaneous

SHOCKING WHITE BOND

Whiting-Plover Paper Co. has available a sample demonstration kit of its new fluorescent paper, Shocking White Plover Bond. Paper is available in sheet sizes 17 in. by 22 in. and 22 in. by 34 in. Weights are 20 lbs. and 40 lbs. respectively. Circle No. 326 on Reader Service Card.

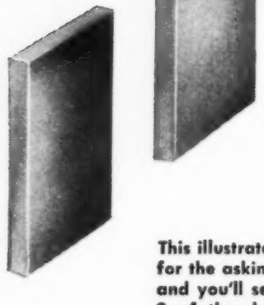
SAVE composing room time

The Mohr Saw



saws slugs automatically

- to *any* measure
- right at the machine
- without spoilage



This illustrated book is yours for the asking — write for it and you'll see why 2 out of 3 of the daily newspapers in the U.S. use the time-saving Mohr Saw.

A Mohr saw, attached directly to your linecasting machine, will cut away the parasites that prey upon profits—walking time, waiting time, sawing time and jam-ups. All sawing is done right *at the machine*,—and you'll get a *better job* without spoilage.

Mohr LINO-SAW Company

8015 N. Ridgeway Ave., Skokie, Illinois

For More Information Circle 123 on Reader Service Card

Loading Dock Tip

In a recent issue of the Chicago (Ill.) *Daily News* there appeared an item about the Buffalo (N.Y.) Postoffice Dept. paying Michael P. Gorman, mail handler, a reward of $12.50. The money was paid for solution of the problem as to how to keep truck exhaust fumes from gathering dangerously at the parcel post loading area. Gorman's solution: Turn off the engines.

We like to think a similar problem has not arisen at printing plant loading docks.

GARDNER LITERATURE

Gardner Laboratory, Inc. has released literature concerning its latest equipment for the Graphic Arts. Model AC-2 Gardner automatic color difference meter with high sensitivity head and automatic built in standardization features is the subject of a two page bulletin. The Interchemical wet film thickness gage is described in an illustrated four page bulletin. Circle No. 316 on Reader Service Card.

ROTO-CAM CONTROL

A bulletin descriptive of the Roto-Cam Control for full line electric walkie type materials handling trucks is available from Lewis-Shepard Products, Inc. Features and operating details of the control are explained in the illustrated bulletin. Control is equipped with both dynamic braking and controlled plugging. Circle No. 317 on Reader Service Card.

LETTERPRESS BULLETIN

Rolled Plate Metal Co. and Atlantic Zinc Works have published a 32 page booklet called *The Advantages of Modern Letterpress*. Its purpose is to tell the story of modern letterpress to planners and buyers of commercial printing. The four color booklet is the result of research, interviews, and field study. It is based on the experience and conclusions of leading corporations, institutions, associations, and men in the field of Graphic Arts. Circle No. 310 on Reader Service Card.

COLOR SCANNER

An attractive six page folder in which is included over 30 miniature four color photographs processed by the Time-Life color scanner is available. Scanner was used to separate color in transparencies and enabled the printing job to be completed in less than seven days. The photographs are examples of those appearing in the *Spectacle of Sport*. Circle No. 321 on Reader Service Card.

ALGRIP BOOKLET

Booklet A1-830 descriptive of the Algrip abrasive rolled steel floor plate has been published by Alan Wood Steel Co. Algrip is claimed to prevent slipping on both flat and inclined surfaces. Circle No. 334 on Reader Service Card.

EASTERN CATALOG

Catalog 20A regarding Eastern printing production equipment and supplies has been offered by Eastern Newspaper Supply, Inc. Circle No. 336 on Reader Service Card.

DEXTER BULLETIN

The Dexter Folder Co. offers a four page, two color bulletin descriptive of models 2, 3, and 6 of the Dexter-Conde Dri-Air pump, an oil free, rotary vane pump for vacuum and pressure applications. Complete specifications and operating recommendations for the three sizes and capacity ranges in which pump is available are included. Drawings and tables are used to give dimensions. Circle No. 329 on Reader Service Card.

News ITEMS

ANPA Research Institute — Robert Mather has recently joined the production engineering staff as a full time field engineer after having previously served as a part time consultant to the Research Institute. He is currently responsible for the Dow Rapid Etch Field Cost Project and has taken over the Stereotype Cost and Quality Study. He graduated from Illinois Institute of Technology with a B.S. degree in Mechanical Engineering. He lives with his wife and two children in Woodstock, Ill.

Harry Ellis, Jr. has been named vice president of the newly formed Klischograph Div. of Consolidated International Equipment and Supply Co., it has been announced by Benjamin Sugarman, president. Sugarman also said that the Klischograph Div. will soon be headquartered in a new building in New York, N. Y.

ELLIS O'NEILL

Paul R. O'Neill has joined the Flexo-Roto Div. of the Howard Flint Ink Co. His headquarters will be in Broadview, Ill.

Announces Industrial Department—The formation of an Industrial Adhesives Dept. by Permacel Tape Corp. has been announced by George C. Riegger, president. Director of the department is John O. Green, assistant secretary of the company, member of the board of directors, and a vice president of LePage's, Incorporated, a Permacel subsidiary. According to Riegger, the department will market both Permacel and LePage's products.

Earnings Reported—Net sales and earnings of Miehle-Goss-Dexter, Inc., for the first nine months ended July 31, 1957, were up over a similar period last year, although third quarter results showed a decline, it was reported by John E. Eddy, chairman, and Robert C. Corlett, president. Net sales of the corporation for the first nine months totaled $49,364,[illegible], an increase of 2% over last year's three quarter total of $48,245,801. Third quarter sales were $14,959,805, as against $17,566,757 last year, a drop of 15%. Eddy attributed the third quarter drop to a slowdown in incoming orders and, in the Goss Div., to a period of engineering preparation for future shipments.

Charles S. O'Neil, 53, vice president in charge of research, Hamilton Manufacturing Co., died recently in Two Rivers, Wis. He had been with Hamilton since 1933 and in 1952 he was appointed vice president in charge of research.

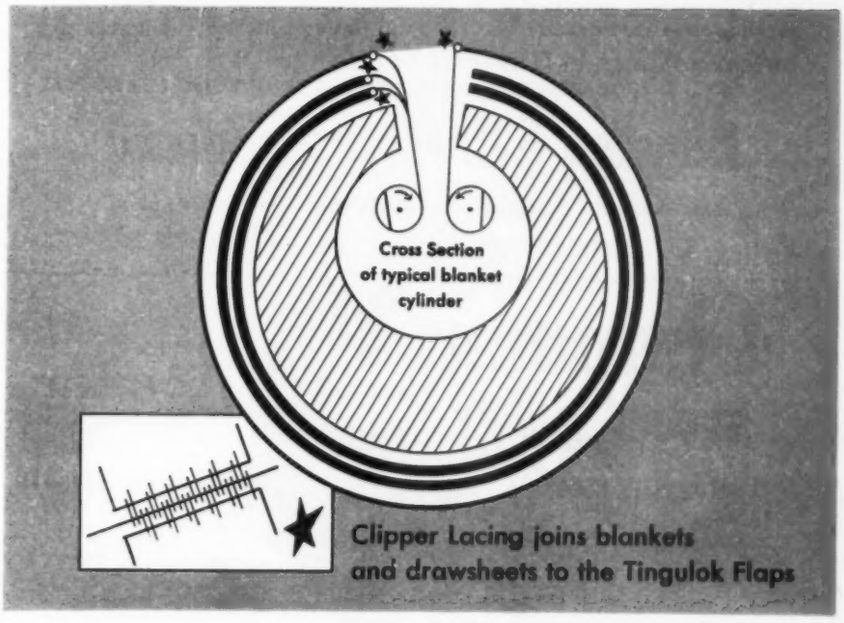
New Owners For Typesetting Firm—Ownership of John A. Scott & Co., typographers, 2812 Taylor, Dallas, Tex., has been acquired by Blair McPhail, El Paso, Tex., and Bennett, Osborn & Hall, Dallas management firm, it was announced recently. McPhail, head of the Sentinel Publishing Co., El Paso, Tex., is the new president of the Scott firm. He succeeds John A. Scott, who founded the company in 1944. William Wagley is vice president; Robert A. Hall, secretary; and Clifford Osborn, treasurer. McPhail said no other changes are contemplated in personnel, operation or policy.

Frank J. Bagamery, jr., secretary and general manager, the Graphic Arts Assoc. of Ill., has resigned to accept an executive position with a company in another industry. Bagamery has held the position since 1953. GAAI is the Illinois trade association for printers and lithog-

REDUCE **DOWNTIME** WITH

TINGULOK*

*Reg. U. S. Patent Office



Blankets go on fast with the "TINGULOK" system . . . no blanket punching or pinning is necessary . . . all attachment is done on the cylinder's surface.

"TINGULOK" flaps and blankets are made up complete, to eliminate preparing of blankets and drawsheets. For two- and three-piece combinations, "TINGULOK" gets blankets on fast . . . minimizes downtime. Write for full information today.

"TINGULOK" cuts down on injuries, too. All blankets are put on without putting fingers in the blanket opening at any time. No more skinned knuckles or injured fingers.

TINGUE PRINTING PRESS BLANKETS

TINGUE, BROWN & CO.

"Blanketeers Since 1902"

1765 Carter Avenue • New York 57, N.Y. • CYpress 9-8800
507 Bishop Street, N.W. • Atlanta, Ga. • ATwood 3864
1227 Wabash Avenue • Chicago 5, Ill. • HArrison 7-0083
723 E. Washington Blvd. • Los Angeles, Cal. • Richmond 9-6023

Canadian Sales Agents: ROSS WHITEHEAD & CO. LTD., Montreal, Canada

For More Information Circle 173 on Reader Service Card

Only the Carlson Finisher Has Complete Visibility

That's why we put the motor out of the way

NO PEERING UNDER

NO BENDING BACK

Seeing exactly what you are doing is the key to accurate, fast outlining and mortising. To get a clear, unobstructed view, the motor and drive of the Carlson Finisher are put *underneath* the table. Plates are placed face up with no locking or blocking needed. You see every line and have perfect control at all times. Work is easier and faster.

When outlining, the cutting tool is raised and the work is moved to the tool, making a perfect vertical cut. The first cut for mortises is pinpointed with the swing-up Locating Pin. The tool is raised through the plate and the mortise is quickly made. In both cases the chips adhere to the dead metal. Cuts right up to live material if necessary.

THE CARLSON FINISHER IS SPECIFICALLY USED FOR MORTISING AND FINISHING BY OVER 150 NEWSPAPERS

Chesley F. Carlson Company

BEN FRANKLIN BUILDING / MINNEAPOLIS 15, MINNESOTA

For More Information Circle 33 on Reader Service Card

Chapman STOPS Static INSTANTLY

COMPLETE STATIC ELIMINATION on

PRESSES
FEEDERS
FOLDERS
BRONZERS
CUTTERS
SLITTERS
PERFORATORS
EMBOSSERS
ETC.

The Original Electronic Eliminator

INCREASES PRODUCTION—REDUCES WASTE — IMPROVES QUALITY —

SAFE TO USE • NO HARMFUL RAYS OR GASES

LOW COST OPERATION • EASY TO INSTALL

YEARS OF TROUBLE-FREE OPERATION

CHAPMAN STATIC Eliminator

manufactured by

The Portland Company **60 FORE ST., PORTLAND, MAINE**

WRITE FOR BULLETINS & DETAILS . . . NOW!

For More Information Circle 146 on Reader Service Card

raphers, affiliated nationally with the Printing Industry of America.

New ROP Color Service Station—R. W. Dando, general manager, Geo. H. Morrill Co., Div. of Sun Chemical Corp., has announced the opening of an ROP Color service station in Cleveland. The Morrill branch will service newspapers in Ohio, Southeast Michigan, Western Pennsylvania, parts of Western New York and the Northwestern part of West Virginia. Customer service inquiries from areas in the five states should be addressed to: Geo. H. Morrill Co., Div. of Sun Chemical Corp., 310 Lakeside Ave., N.W., Cleveland.

Company Expands—As a part of an expansion program, Economy Lithograph Co., has been reorganized and its name changed to the John F. Mawson Co., according to John F. Mawson, proprietor. D. A. Drotning, general manager, and L. M. Richards, manager of the typesetting division, will share in the ownership of the new corporation. Construction on a new building will begin this fall.

Linotype Appointment—E. L. Tabat has been appointed general sales manager of Mergenthaler Linotype Co., it was announced recently by J. W. Reid, vice president in charge of sales.

TABAT

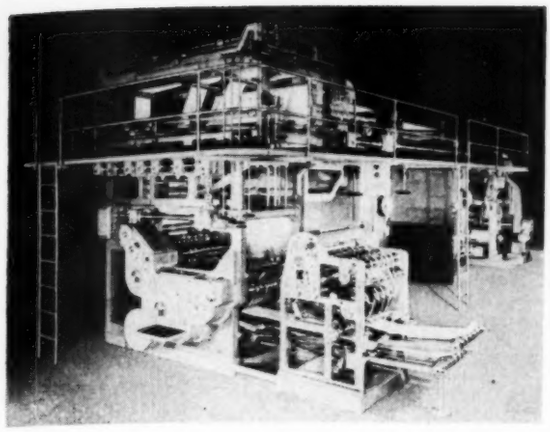
MERTZ

Sales Engineer—Dexter Folder Co. announces appointment of Ralph F. Mertz as sales engineer for metal sheet feeders and related equipment. Mertz was formerly product engineer for Dexter.

Robert Pulleyn has been elected a member of the board of directors of Mergenthaler Linotype Co. He succeeds John R. Fell, who recently resigned. Pulleyn has been practicing law in New York, N. Y. for 31 years.

The Calvert Lithographing Co., Detroit, has purchased from the Mulford Company its interests in the National Lithograph Co., also in Detroit. According to Charles F. King, president, Calvert Lithographing Co., the purchase included the name, personnel, and other assets of National Lithograph Co. The company will continue to operate as a unit of the Calvert organization under the National name.

Branch Sales Manager—Promotion of Edward S. Nederostek to Dallas, Tex. branch sales manager, printing products division, has been announced by Minnesota Mining & Mfg. Co. Nederostek joined 3M in 1950 as a cellophane tape salesman.



Cerutti Press Installed—This perfector type Model L Cerutti rotogravure press was recently installed by Murray Printing and Gravure, Ltd., Canada, for monotone printing of magazines and catalogs. The press, which is distributed by Parsons & Whittemore Graphic Corp., is the first Cerutti publication press in use in Canada.

Graphic Arts Meetings

(With Organization Name and Correspondence Officer)

American Photoengravers Assoc. — 1957 Conv., Bellevue-Stratford Hotel, Philadelphia, Oct. 14-16. Exec. Secy. Frank J. Schreiber, 166 W. Van Buren St., Rm. 430-A, Chicago 4, Ill.

ANPA Mechanical Conf.—1958 Conf. Chalfonte-Haddon Hall, Atlantic City, N. J., June 23-25. Mgr. Richard E.

Davidson Promotion—Thomas H. McFadden, manager of Davidson Corporation's Los Angeles branch office since 1952, has been appointed regional sales manager by W. W. Davidson, jr., executive vice president.

Chester E. Davis has retired as executive vice president of Alan Wood Steel Co., it was announced recently by Harleston R. Wood, president. Davis joined the firm in 1930 as an industrial engineer.

The Lithographers National Assoc. is planning to expand and enlarge its industry wide and member service program under Oscar Whitehouse, newly appointed executive director, it was announced recently by Carl N. Reed, president. Reed also reported that there would be a gradual move of LNA headquarters to Washington, D. C., with Eastern and Western offices maintained in New York and Chicago. The Eastern office will be headed by Herbert W. Morse, promotion director and the Western office by Gordon C. Hall, Western manager.

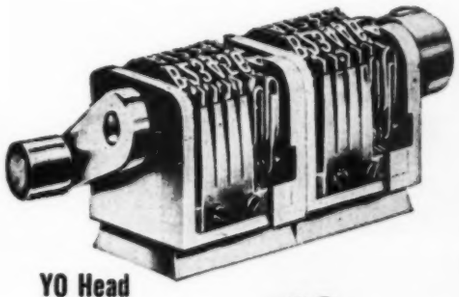
Executive Vice President—At a recent meeting of the board of directors of the Timken Roller Bearing Co., Dwight A. Bessmer was elected executive vice president of the company. Bessmer joined the firm in 1933.

Bostitch Completes Move—Bostitch, Incorporated has moved to its new $6 million factory and headquarters in East Greenwich, R. I., it was announced by Emmet G. Gardner, president. The plant, said to be the largest one story factory in New England, measures 440 ft. by 960 ft. on an 84 acre site. Plant can be expanded in three directions to provide for future growth.

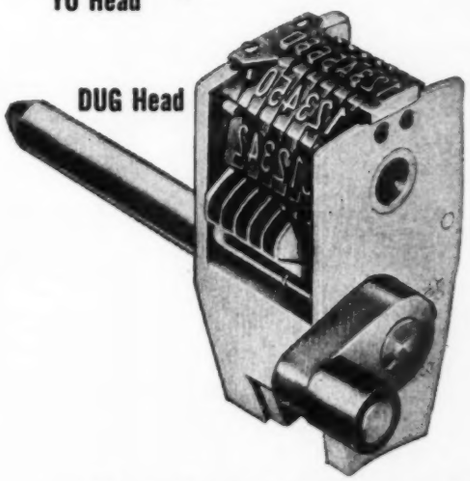
Branch Office Moves—Arthur M. Bean, manager of the St. Louis, Mo. branch office of Ideal Roller & Mfg. Co., recently announced that the office has moved to a new location at 3818 Laclede Ave.

Please take a look at your address on the wrapper in which *Printing Equipment Engineer* is sent. If it isn't correct, tell us about it on a postcard.

Tickets to profitable numbering...



YO Head



DUG Head

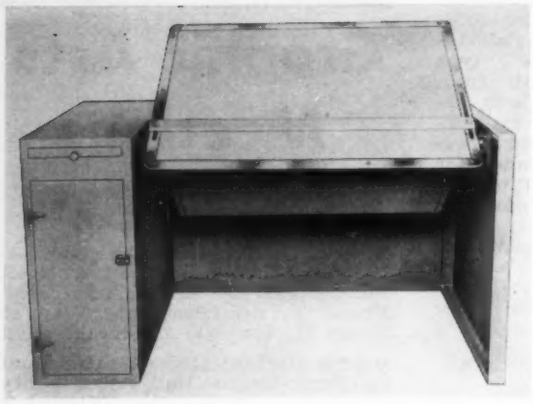
Force rotary numbering heads

Keep the presses rolling on ticket and coupon jobs because they're precision-engineered for accurate numbering at high speed. These center-driven heads provide maximum versatility in single and multiple set-ups . . . and stand up under the stresses and pressures of long runs. They are machine-finished to the highest manufacturing standards—operate like watches, interchange freely and register with ease.

Write for Force Rotary Head Operating and Maintenance Manual

WM. A. FORCE & CO., Incorporated
The FORCE in NUMBERS
216 Nichols Ave.
Brooklyn 8, N. Y.

For More Information Circle 64 on Reader Service Card



Artists' Retouch Table—The Bar-Plate Manufacturing Co. has announced the Micro-Perfect artists' retouch table, made of 16 ga. cold rolled steel and finished in office gray. Table is equipped with double strength opal glass and ¼ in. clear plate glass top. Other features include a three way fluorescent light set up, four adjustable straightedges, an adjustable bridge, storage cabinet and paper rest. Sizes are: 20 in. by 24 in., 26 in. by 30 in. and 30 in. by 40 in. Other sizes will be made on special order. Circle No. 267 on Reader Service Card.

Lewis, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

Book Manufacturers' Institute—Secy. Miss A. G. Watson, 25 W. 43rd St., New York 36, N. Y.

Educational Graphic Arts Exposition—Coliseum, New York, N. Y., Sept. 6-12, 1959. Gen. Mgr. A. E. Giegengack, 5600 Massachusetts Ave., N.W., Washington 16, D. C.

Fifth District Craftsmen's Conf.—Secy.-Treas. George W. Thompson, Toledo Colortype Co., 1711 Jefferson Ave., Toledo, O.

Graphic Arts Trade Assoc. Executives—1957 Meeting, Chicago, Ill., tentative dates Oct. 12-13. Secy.-Treas. Charles P. Hackett, Memphis Printing Industries, 215 Hickman Bldg., Memphis, Tenn.

Gravure Technical Assoc.—1958 Conv., Hotel Commodore, New York, N. Y., Feb. 26-28. Exec. Secy. Edward S. St. John, Room 4800, 30 Rockefeller Plaza, New York 20, N. Y.

Great Lakes Mechanical Conf.—1958 Conf., Hotel Claypool, Indianapolis, Ind., Jan. 12-14. Secy.-Treas. Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press.*

Illinois Newspaper Mechanical Conf.—Secy.-Treas. Arthur Kramer, Joliet (Ill.) *Herald-News.*

Intl. Assoc. Electrotypers & Stereotypers—1958 Conf., American Hotel, Bal Harbour, Fla., Oct. 21-24. Exec. Secy. Floyd C. Larson, 701 Leader Bldg., Cleveland 14.

Intl. Assoc. of Printing House Craftsmen—1958 Conv., Statler Hotel, Detroit, Mich., Aug. 10-13. Exec. Secy. Pearl E. Oldt, 411 Oak St., Cincinnati 19, O.

Intl. Graphic Arts Education Assoc.—Exec. Secy. Samuel M. Burt, 5728 Connecticut Ave., N.W., Washington 15, D. C.

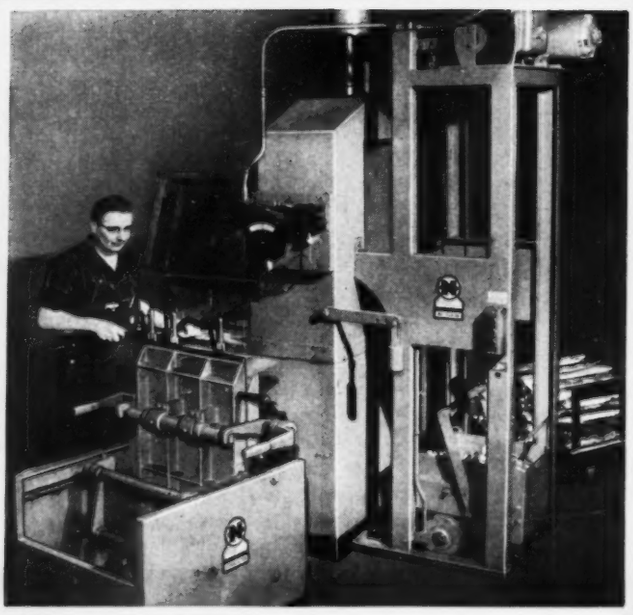
Intl. Printers Supply Salesmen's Guild—1958 Conv., Statler Hotel, Detroit, Mich. Secy. Francis J. Tominey, *New England Printer & Lithographer,* 470 Atlantic Ave., Boston 10, Mass.

Intl. Typographic Composition Assoc.—1958 Conv. Ambassador Hotel, Los Angeles, Calif., Oct. 15-18. Exec. Secy. W. E. Switzer, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conf.—Secy.-Treas. Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald.*

Kansas-Missouri Newspaper Mechanical Conf.—Secy.-Treas. Larry Miller, Kansas Press Assoc., 701 Jackson St., Topeka, Kans. Missouri Secy.-Treas. William A. Bray, Missouri Press

"Nolan Equipment Steps Up Remelting Processes 50%"



Jack Ferguson, stereo foreman, The London Free Press operates new Nolan equipment. Nolan 4-ton capacity Combination Remelt Furnace equipped with Meltevator. Flat stereotype plates are cast in Nolan full page Supercaster. Linotype pigs are poured from opposite side into Nolan Twin Type water-cooled Ingot Molds.

Mr. M. T. Parkinson, Superintendent of Composing and Stereotype operations for the London, Ontario, Free Press reports, "Remelting processes have been stepped up by 50 per cent . . . operations are much safer and much easier . . . since installation of Nolan equipment."

SAVE TIME...METAL...SPACE

The Nolan MELTEVATOR loads 600 pounds of metal in 30 seconds. The Nolan REMELTER melts a full pot in less than two hours, additional loads in one hour. Metal costs are lower as raw stock requirements are reduced. Unique features permit better utilization of space.

NOLAN Corporation

For More Information Circle 132 on Reader Service Card

Assoc., 220 Walter Williams Hall, Columbia, Mo.

Lithographers National Assoc., Inc.—1958 Conv., Arizona-Biltmore Hotel, Phoenix, Ariz., Apr. 28-May 1. Exec. Dir. Oscar Whitehouse, 381 Fourth Ave., New York 16, N. Y.

Mid-Atlantic Newspaper Mechanical Conf. — 1958 Conf., Penn-Sheraton Hotel, Pittsburgh, March 13-15. PNPA General Mgr. Richard Dew, 2717 N. Front St., Harrisburg, Pa.

National Assoc. of Litho Clubs—1958 Conv., Washington, D. C., May 1-3. Exec. Secy. Edward L. Bode, 504 Majorie Ave., Dayton 4, O.

National Assoc. of Photo-Lithographers—1958 Conv., Statler Hotel, Boston, Mass., Sept. 10-13. Exec. Dir. Walter E. Soderstrom, 317 W. 45th St., New York 36, N. Y.

National Paper Trade Assoc.—1958 Meeting, Waldorf Astoria Hotel, New York, N. Y., Mar. 31-Apr. 2. Secy. J. H. Londergan, 220 E. 42nd St., New York 17, N. Y.

National Printing Equipment Assoc., Inc.—1957 Conf., Hotel Morrison, Chicago, Oct. 15-16. Secy. James E. Bennet, 140 Nassau St., New York 38.

National Safety Council Printing and Publishing Section—1957 Conf., Conrad Hilton Hotel, Chicago, Oct. 23-24. Staff Rep. Arthur Siedlecki, National Safety Council, 425 N. Michigan Ave., Chicago 11.

New England Composing Room Executives Assoc. — Secy. Lewis R. Greene, Westerly (R.I.) *Sun.*

New England Newspaper Mechancal Conf.—1957 Conv., Hotel Statler, Boston, Mass., Oct. 19-20. Secy.-Treas. Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day.*

New York State Capital District Mechanical Conf.—Dir. Floyd Laurenty, Albany (N. Y.) *Times-Union.*

Northwest Mechanical Conf. — 1958 Conf., Radisson Hotel, Minneapolis, Minn., Feb. 22-24. Secy.-Treas. Ralph N. Carson, Linecasting Instructor, Dunwoody Industrial Institute, 818 Wayzata Blvd., Minneapolis, Minn.

Pacific Newspaper Mechanical Conf., —1958 Conf., Mark Hopkins Hotel, San Francisco, Calif., Sept. 5-7. Secy. Ed Maggi, Phillips & Van Orden Co., 879 Brannan St., San Francisco, Calif.

Packaging Institute Assoc. — 1957 Forum, Hotel Statler, New York, N. Y., Oct. 28-30. Exec. Dir. Chas. A. Feld, 342 Madison Ave., New York 17, N. Y.

Printing Industry of America—1957 Annual Conv., Morrison Hotel, Chicago, Ill., Oct. 14-18. Gen. Mgr. Bernard Taymans, 5728 Connecticut Ave., N.W., Washington 15, D. C.

Research and Engineering Council—1958 meeting, Edgewater Beach Hotel, Chicago, May 21-23. Managing Dir. Robert E. Rossell, 5728 Connecticut Ave. N.W., Washington 15, D.C.

ROP Color Conf.—Secy. H. J. Prag, Room 520, 333 N. Michigan Ave., Chicago 1.

SNPA (Western Div.) Mechanical Conf.—1958 Conf., Hotel Mayo, Tulsa, Okla., Mar. 2-4. Secy. Walter Johnson, jr., P.O. Box 1569, Chattanooga 1, Tenn.

Southern Graphic Arts Assoc.—Secy. Charles E. Kennedy, 1514 South St., Nashville 2, Tenn.

Screen Process Printing Assoc., Intl. —1957 Conf., Sheraton-Cadillac Hotel, Detroit Mich., Oct. 26-28. Exec. Secy. Robert H. Blundred, 549 W. Randolph St., Chicago 6.

SNPA (Eastern Div.) Mechanical Conf.—1958 Conf., Dinkler-Plaza Hotel, Atlanta, Ga., Aug. 17-19. Secy. Grady M. Lemons, Southern Newspaper Publishers Assoc., P.O. Box 1569, Chattanooga 1, Tenn.

Technical Assoc. of the Graphic Arts —1958 Conv., Beverly-Hilton Hotel, Los Angeles, June 23-26. Secy.-Treas. B. L. Sites, Miehle Printing Press & Mfg. Co., 2011 W. Hastings St., Chicago 8.

NEW MORTISING TOOL

Adds Triple Duty to MORRISON *Router and Type High Planer*

No need now to invest in an expensive *single purpose* machine to handle your mortising! A new straight sided cutting tool developed for the popular Morrison Router and Type High Planer does the job faster, cleaner, easier — and at less investment — on your shell-cast, plastic or zinc plates. And you can use the *same* machine for routing and planing as well — for Triple-Duty versatility!

The new Mortising Tool performs all work from the *top* — inside mortises, outlining, cut-outs. Provides improved visibility, accuracy, speed. You move the *work*, not the cutting head, so plate does not have to be raised off the table.

For composing rooms, stereotype departments, engraving plants, electrotype foundries . . . ADD THIS TRIPLE DUTY Advantage to your operations — for TIME AND LABOR SAVINGS! Get the whole story and prices!

THE MORRISON COMPANY
125 West Melvina Street • Milwaukee 12, Wisconsin

PRECISION MACHINES FOR THE GRAPHIC ARTS INDUSTRY

For More Information Circle 127 on Reader Service Card

books

51st Penrose Annual

One of the prize packages of the year was received recently by *Printing Equipment Engineer.* This is the new 51st *Penrose Annual.* Before discussing content of the book, we want to mention that it is dedicated as a memorial to R. B. Fishenden. If he had lived, this would have been Fishenden's sixteenth volume. One of the General Articles consists of an appreciative biography of the noted editor by Mrs. Beatrice Warde.

In the 51st *Penrose Annual* are presented 18 articles of a general nature, all related to the Graphic Arts. One of these is *Editorial Commentary* by R. S. Hutchings, editor of the *British Printer.* Hutchings sums up and appraises recent technological progress in the industry.

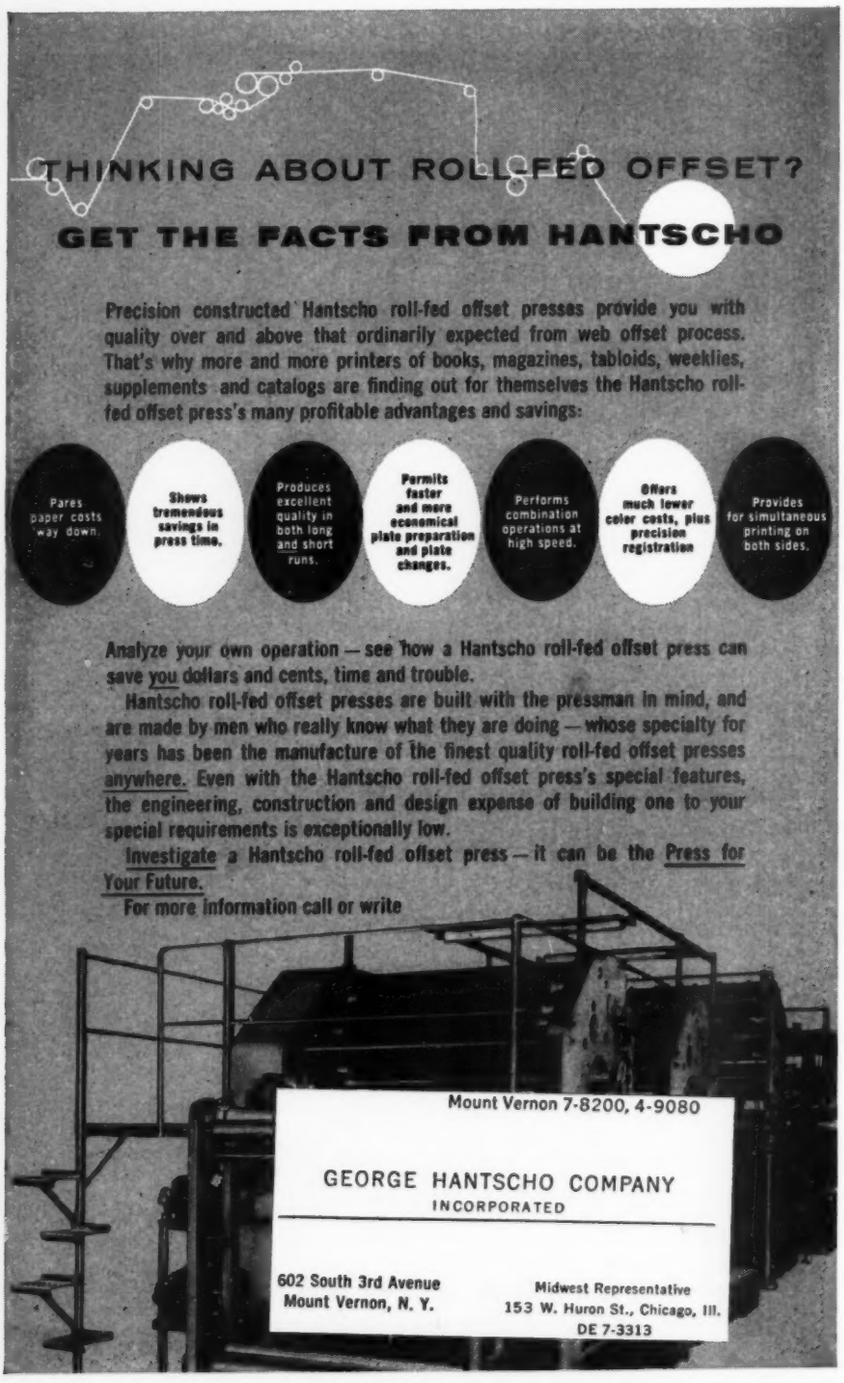
Of greatest interest to readers of *Printing Equipment Engineer* will be the 23 technical articles regarding advancements in equipments and processes. Of these, seven were written by American research and technical men well known to the industry. Among them are: Charles H. Borchers, LTF; W. D. Bolton and W. E. Goetz of IBM; Louis Rossetto of Mergenthaler Linotype Co.; Raymond Alfaya of Du Pont; F. R. Clapper and F. J. Drago, Eastman Kodak Co.; and J. S. Mertle.

In the main, the book is printed letterpress. However, to add to broadness of latest techniques in the industry, not only are illustrations printed letterpress, but offset and gravure are also used. There are a liberal number of inserts in the *Annual,* executed in color by the process under discussion.

One of the most fascinating sections entitled *Illustrations of the Year,* consists of a series of 18 color inserts executed by various processes including wood engraving, linoleum block; photoengraving, offset, and gravure in color process printing, and by die and relief stamping.

The last section of the book consists of advertisements for paper, service, and equipment and supplies manufacturers.

Penrose Annual—51st edition, 1957. Edited by R. B. Fishenden with assistance of successor board after his death. Size 8¼ in. by 11¼ in.; over 200 pages with 50 pages of advertising. Dark green cloth, hard bound with gold stamping. Price $9.75 per copy. May be ordered through *Printing Equipment Engineer,* 1276 W. Third St., Cleveland 13, O.


THINKING ABOUT ROLL-FED OFFSET?
GET THE FACTS FROM HANTSCHO
Precision constructed Hantscho roll-fed offset presses provide you with quality over and above that ordinarily expected from web offset process. That's why more and more printers of books, magazines, tabloids, weeklies, supplements and catalogs are finding out for themselves the Hantscho roll-fed offset press's many profitable advantages and savings:
Pares paper costs way down.
Shows tremendous savings in press time.
Produces excellent quality in both long and short runs.
Permits faster and more economical plate preparation and plate changes.
Performs combination operations at high speed.
Offers much lower color costs, plus precision registration
Provides for simultaneous printing on both sides.
Analyze your own operation — see how a Hantscho roll-fed offset press can save you dollars and cents, time and trouble.
Hantscho roll-fed offset presses are built with the pressman in mind, and are made by men who really know what they are doing — whose specialty for years has been the manufacture of the finest quality roll-fed offset presses anywhere. Even with the Hantscho roll-fed offset press's special features, the engineering, construction and design expense of building one to your special requirements is exceptionally low.
Investigate a Hantscho roll-fed offset press — it can be the Press for Your Future.
For more information call or write
Mount Vernon 7-8200, 4-9080
GEORGE HANTSCHO COMPANY
INCORPORATED
602 South 3rd Avenue
Mount Vernon, N. Y.
Midwest Representative
153 W. Huron St., Chicago, Ill.
DE 7-3313
For More Information Circle 81 on Reader Service Card

COLOROPTICS

The newspaper printing and publishing industry should be grateful to the Milwaukee (Wis.) *Journal* for accomplishment of a tremendous undertaking in publishing *Coloroptics.* This impressive work will be the means for encouraging a considerable increase in ROP color printing in newspapers generally throughout the country. Both editorial and ad newspaper color printing are covered. Publishers of the portfolio do not deal in theory. Instead, actual examples shown by tear sheets taken from the *Journal* together with reader response as contrasted with black and white printing of the same ads are shown in chart form to prove reader response. The results are startling.

This portfolio is in 16½ in. by 24 in. *Journal* page size. It contains 10 sections with more than 100 full size tear pages.

The 10 sections in the portfolio contain the following: National Brand Foods, Local Foods and Grocery Products. Fashions and Furniture, Automotive and Liquor, Appliances, Real Estate, Building and Financing, Editorial Pages and Features, and TV-Screen Section.

One of the most convincing pieces of data contained in the portfolio (provided from 3600 interviews of readers) consists of matched data covering 24 split run tests which measures the response for color ads and black and white counterparts.

The survey was undertaken for the *Journal* by Publication Research Service of Chicago. It is reported that for these studies, 12 separate samplings and 3600 interviews were made to get the desired color evaluation.

The *Journal* tells us that to provide the sample pages for the 3500 edition it was necessary to tear

1,074,500 newspaper pages from 28 different sections. Three issues of the *Journal* were surveyed—two on weekdays and one Sunday edition in April this year.

Coloroptics—Published by Milwaukee (Wis.) *Journal*. As long as copies last, they are available at $17.50 each. Ten sections in full newspaper page size; 16 pages of comparisons, tables, charts, detailed ad analysis, facts on 24 split run tests. overall conclusions. Order from the *Journal* direct.

Central PNMC Officers

The 1958 Pacific Mechanical Conference will be held at Mark Hopkins Hotel, San Francisco, Calif., September 5, 6 and 7. New officers of the conference's Central Div. are as follows: President, John Bonato, San Francisco, Calif.; first vice president, Harry Davidson, San Francisco (Calif.) *Call-Bulletin;* second vice president, Howard Fitzsimmons, Monterey (Calif.) *Peninsula Herald;* Edward J. Maggi, Phillips & Van Orden Co., 870 Brannan St., San Francisco 3, Calif., secretary.

Conducts Typo Workshops

A series of five Graphic Arts talks were presented by Howard N. King, well-known typographer and book designer and typographic consultant to the Intertype Company, to groups in Iowa and Oklahoma during September. King also conducted a Typographic Workshop at the North Dakota State School of Science, Wahpeton, N. Dak. King is vice president of the Maple Press Co., York, Pa., and a past president of the Intl. Craftsmen's Assoc.

Miller Attends Graphic '57

The Miller Printing Machinery Co. participated in the Graphic '57 International Fair of Printing and Allied Trades held recently in Lausanne, Switzerland. The Miller display booth was one of the best attended exhibits at the Fair. In addition to the TW, SY and TY letterpresses, which were displayed in operation, Miller also had a second TW press at another location printing a color production job.

SNPA Eastern Conference Attracts 400 Executives

Nearly 400 industry executives were on hand for the 1957 Mechanical Conference of Southern Newspaper Publishers Assoc., Eastern Div., held recently in Birmingham, Ala. Officials of the conference were: Fred L. Morris, mechanical superintendent, Augusta (Ga.) *Chronicle* and *Herald,* chairman; Girt Cochrane, mechanical superintendent, Charleston (W. Va.) *Gazette,* vice chairman; and Grady M. Lemons, SNPA office, Chattanooga, Tenn., secretary.

The conference program included sessions on machinists' problems and on *New Ideas in Research Development.* There were other group meetings concerned with operations and problems of the various production departments. The program finale featured a talk on automation.

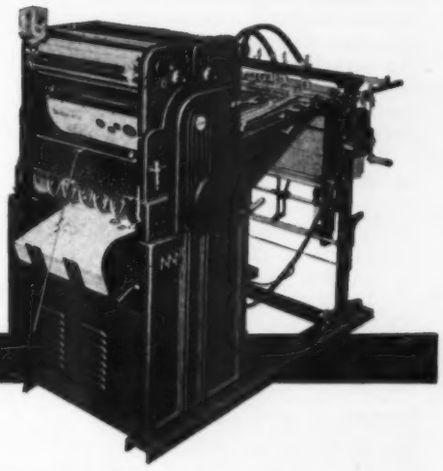
Cochrane was elected chairman of next year's conference. He will be assisted by Calvin C. Thomas, St. Petersburg (Fla.) *Times,* who was elected vice chairman. The 1958 conference will be held at Dinkler-Plaza Hotel, Atlanta, Ga., Aug. 17-19.

Dobeckmun-Dow Merger

Stockholders of Dobeckmun Company, Cleveland, have approved a merger with Dow Chemical Co., Midland, Mich. The former company will be known as a division of the Dow firm. Dobeckmun is a manufacturer of flexible packaging materials and gift wraps. Dow's products include transparent plastic sheeting, thermoplastic coatings, and a process for high speed etching of magnesium photoengravings.

the big DAVIDSON model 233 DUAL-LITH

handles up to 14" x 17½" stock



2-CYLINDER PRINCIPLE GIVES YOU 8 WAYS TO EXTRA PROFITS!

PRINTS BOTH SIDES AT ONCE

DAVIDSON DUAL-LITH Model 233 produces top quality, close register, fine halftone and multi-color offset work at low cost on a maximum form area of 13" x 17". It opens the way for more profits for you because the famous Davidson two-cylinder principle gives you—on one press—offset, simultaneous two-sided lithography, letterpress, dry offset and imprinting from Linotype slugs. What's more, you can also Davengrave, number and perforate! Model 233 handles stock from manifold to light cardboard, in sheet sizes from 4" x 6" to 14" x 17½". Within its form size capacity, there is no job too difficult or too complicated for Model 233. It's a real press in both ruggedness and size. Compare it!

DID YOU KNOW that you can print letterheads four-up on a 17" x 22" sheet with your Model 233? Write for complete information.

DAVIDSON CORPORATION
A Subsidiary of Morgenthaler Linotype Company
29 RYERSON STREET, BROOKLYN 5, NEW YORK

Distributors in all principal cities

Text set in Linotype. Headings in Davidson ProType

DAVIDSON CORPORATION PEE-9-7
29 Ryerson Street, Brooklyn 5, New York
☐ Send literature on DAVIDSON DUAL-LITH Model 233.
☐ Send Technical Bulletin on Simultaneous Two-Sided Lithography.
☐ Arrange a demonstration in my locality.
Name _____
Firm _____
Address _____
City _____ Zone ___ State _____

For More Information Circle 207 on Reader Service Card

PIA Will Discuss Manpower

Proper utilization of manpower in printing plants will be the theme of this year's convention of Printing Industry of America to be held at Hotel Morrison, Chicago, Oct. 15-17. This theme will follow up a report presented at last year's convention in which high profit companies in the printing industry traced the reason for their high profits to proper personnel utilization.

One of the highlights of the Chicago convention will be a Graphic Arts Information Show which will open on Oct. 14. The show has been designed to bring together in one place information on printing equipment and supplies which is of importance to management. Heavy Graphic Arts equipment as such will not be exhibited. The exhibits will consist mainly of illustrative displays. There will also be displays of services useful to printing executives. A section of the exhibit floor will be set aside for the continuous showing of Graphic Arts movies.

The days of Oct. 14 and 18 will be devoted to meetings of special groups. The Rotary Business Forms Section, Trade Binders Section, and Ticket and Coupon Section have already scheduled meetings for Oct. 14.

The annual PIA Self-Advertising Awards Breakfast will take place on Oct. 15, followed by the official opening of the convention. Keynote speaker will be Fred Smith, nationally known for his work in human engineering. There will be meetings on Oct. 16 and 17 of the Master Printers Section and Union Employers Section. The final convention session will feature discussion on *How To Overcome the Shortage of Manpower*.

There will be a membership meeting and luncheon on Oct. 16 of the National Printing Equipment Assoc.

Convention details may be obtained by writing: Printing Industry of America, 5728 Connecticut Ave., N.W., Washington, D. C.

Please take a look at your address on the wrapper in which *Printing Equipment Engineer* is sent. If it isn't correct, tell us about it on a postcard.

Associations To Combine

Graphic Arts Assoc. of Illinois will have a new name, new members and opportunity for growth as a result of formal affiliation with the Franklin Assoc. of Chicago, the association for union employers in the printing industry. The name of the enlarged organization will be the Printing Industry of Ill. The present Franklin Assoc. will become the Union Employers Section of PII. The present Master Printers Section, composed of open shop printing firms, will continue affiliation with PII.

Each section of the new PII retains its own identity, separate officers and board of directors, elected from its membership. Each section will have full autonomy to operate in its own field. The PII headquarters will provide administrative services, legislative representation, legal counsel, public relations, and other activities and services to members which do not affect labor relations.

SWPA Launches Program

A program to re-sell letterpress printing has been launched by the Southwestern Photoengravers Assoc. The trade group has already begun its program of trade education, which was approved and

let us help you down...

Production costs continue to advance—some say they're sky high. As one means of helping you "down" from high metal costs, Imperial offers its services which include time tested type metal plus and service plans. Systematic close attention to your metal gives you the advantage of low costs with highest efficiency. Let us send detailed information.

Imperial you get EXTRA ADVANTAGES with

IMPERIAL TYPE METAL CO.

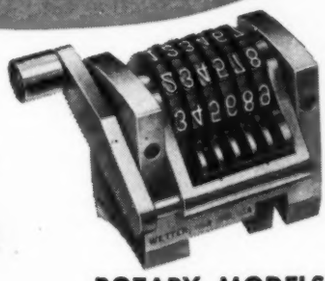
CHICAGO 50 • NEW YORK 7 • PHILADELPHIA 34

For More Information Circle 94 on Reader Service Card

MIDGET MODEL

No!

Want Clean, Accurate NUMBERING?

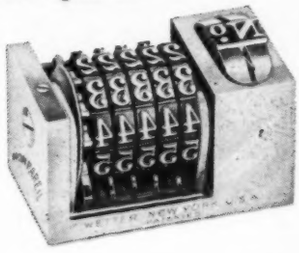


DO IT BETTER WITH

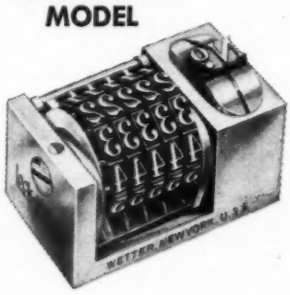
ROTARY MODELS
(Right angle or parallel)

WETTER

Fine workmanship, rugged construction insure crisp accuracy, clean impressions, perfect sequence
—every time!



LOCK-WHEEL MODEL



NONPAREIL MODEL

Write for information and prices

3968

WETTER NUMBERING MACHINE CO.
ATLANTIC AVENUE & LOGAN STREET · BROOKLYN 8, N. Y.
ONLY UNION MADE NUMBERING MACHINE IN U.S.A.

For More Information Circle 188 on Reader Service Card

ALCOA ABRASIVE TREAD PLATE

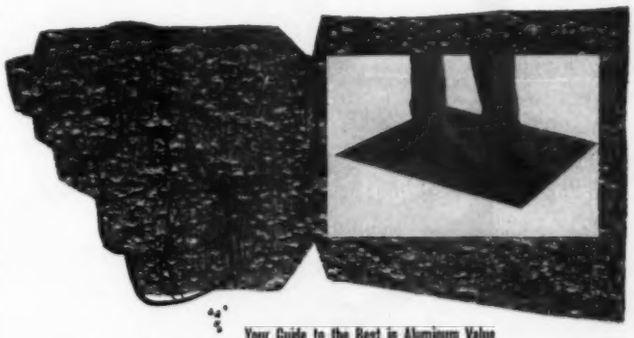
safest surface in your plant!

The tough particles that make a grindstone cut metal make it the safest of all surfaces for walking.

Alcoa, the nation's leading supplier of fused aluminum oxide for grinding wheels, is now making an aluminum tread plate from this identical material. By rolling these sharp abrasive particles into strong, light, rustproof aluminum, Alcoa offers a surface on which men can safely stand or work under almost any conditions. It stays slip-proof even when wet, oily or greasy. Since the abrasive is rolled in, its slip-proof qualities are more than surface deep!

If your plant contributes to the 20,000 deaths by falls that occur each year, or to the thousands of injuries, here's a way to stop them: install Alcoa® Abrasive Aluminum Tread Plate on catwalks, stairways, walkways, pedestrian lanes... wherever men work or walk... wherever surfaces get slippery.

Measured by the cost of even a single injury, the cost is trifling. For sample and complete data, use the coupon below. Aluminum Company of America, 1673-F Alcoa Bldg., Pittsburgh 19, Pa.



Your Guide to the Best in Aluminum Value

ALCOA ALUMINUM ABRASIVE TREAD PLATE

NEW! "ALCOA THEATRE" Exciting Adventure Alternate Monday Evenings

Aluminum Company of America
1673-K Alcoa Bldg.
Pittsburgh 19, Pa.

Please send literature and four-inch sample of abrasive tread plate.

Name and Title .....
Company .....
Use Being Considered .....
Address .....
City and State .....

For More Information Circle 6 on Reader Service Card

R&E Council officers at recent Minneapolis meeting, left to right, were: Geo. H. Cornelius, jr., Cornelius Printing Co., Indianapolis, Ind., first vice president; Felton Colwell, Colwell Press, Minneapolis, president; Alan S. Holliday, Craftsman Press, Kutztown, Pa., second vice president; W. R. Spiller, Harris - Intertype Corp., treasurer; and C. L. Jewett, Minnesota Mining & Mfg. Co., secretary.

subscribed to by its membership at the SWPA annual convention in Kansas City, Mo. in June. Specifically leveled at the purchasers and specifiers of printing, the program will utilize direct mail, publicity, and speakers' bureau techniques to tell of the advantages of letterpress printing.

"During recent years," says Roy Blanks, Blanks Engraving Co., Dallas, new president of the association, "photoengravers have been pinched by the swerve from letterpress printing to competing processes. Where the printer could adapt to new processes, the photoengraver could not, since only letterpress printing utilizes photoengraved copper and zinc plates. It is our firm conviction that letterpress has a great future."

R&E Council Officers Change '58 Meeting Dates

At a recent meeting in Minneapolis, officers of Research and Engineering Council of the Graphic Arts Industry changed the date of the Council's Eighth Annual Meeting to May 21-23, 1958. The date of the meeting had formerly been announced as May 14-16. The meeting will be held at Edgewater Beach Hotel, Chicago. The Council's Ninth Annual Meeting, will be held in New York, N. Y., May 1959.

The officers also discussed plans for a proposed traveling lithographic plate exhibit; approved plans for a symposium on materials handling to be held in Chicago in November.

Dispatch Room Is Middleman

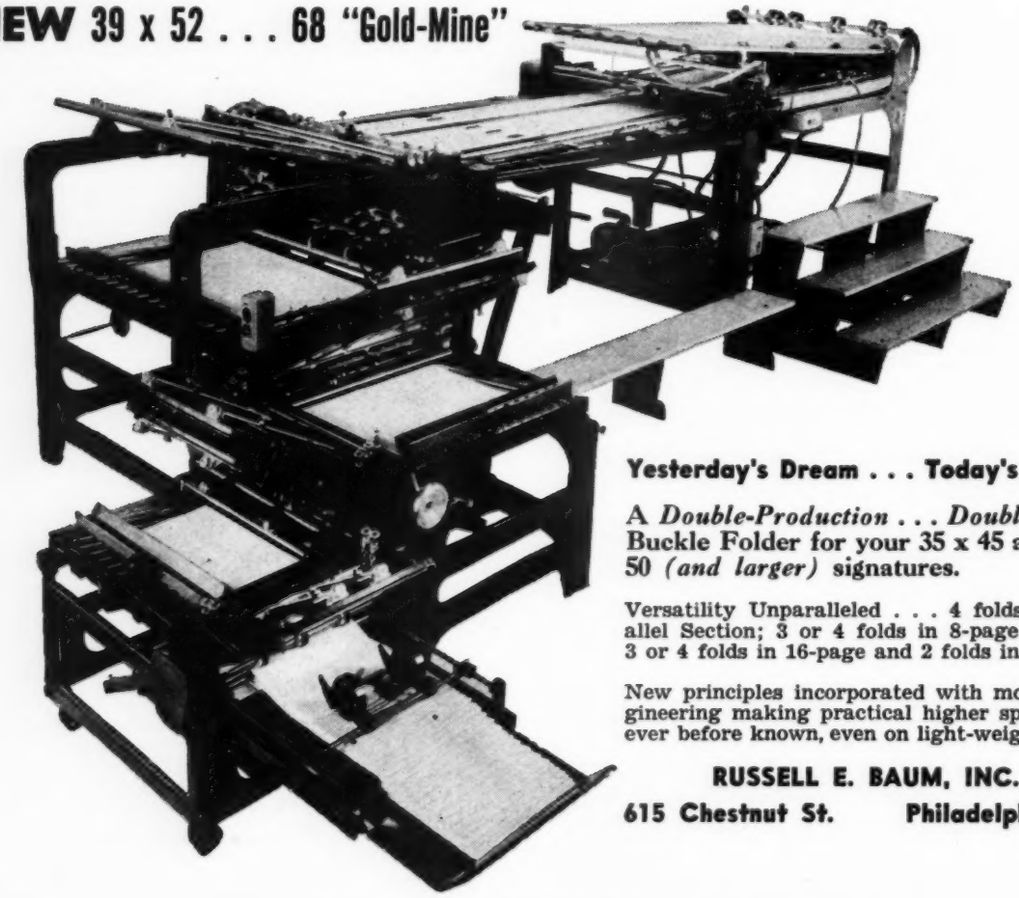
By C. FRANK MANN*

**Composing Room Supt., Louisville (Ky.) Courier Journal and Times. Abstract of address delivered before SNPA (Eastern Div.) Mechanical Conference, Birmingham, Ala., August 1957.*

The time element, which is so vitally important in the production of a newspaper, makes the synchronization of interdepartmental operations between the news room and the composing room and between the advertising department and the composing room an absolute necessity. This can only be accomplished by setting up a series of production schedules covering all the routine operations in both of these departments affecting the composing room.

To illustrate the necessity and importance of schedules governing the flow of news copy, in our own case, the first edition of the *Courier-Journal,* which will vary from 18 pages with 108 columns of news on Mondays to a high of 80 pages with 150 columns of news on Thursdays and Fridays,

NEW 39 x 52 . . . 68 "Gold-Mine"



Yesterday's Dream . . . Today's Reality

A *Double-Production . . . Double-Profit* Buckle Folder for your 35 x 45 and 38 x 50 *(and larger)* signatures.

Versatility Unparalleled . . . 4 folds in Parallel Section; 3 or 4 folds in 8-page Section; 3 or 4 folds in 16-page and 2 folds in 32-page.

New principles incorporated with modern engineering making practical higher speed than ever before known, even on light-weight stock.

RUSSELL E. BAUM, INC.

615 Chestnut St. Philadelphia, Pa.

For More Information Circle 18 on Reader Service Card

must be made up and in the hands of the stereotypers 1 hr. and 45 min. from the time we start work. We accomplish this by close organization, teamwork, co-operation and, most important of all, a strict adherence by the editorial department to the news copy schedules.

Advertising Copy Schedules

We have 38 hrs. time in which to furnish proofs after receipt of advertising copy.

The Ludlow and Linotype composition is set and all cuts are cast or mounted during the night. The next morning everything is in readiness for the day force to begin assembling the ads. An attempt is made to complete the whole operation in 22 hrs. and have proofs ready before the day force is off. If the volume is too great to finish within this time, we have enough leeway to carry some of the work over into the night side and still have proofs out on time.

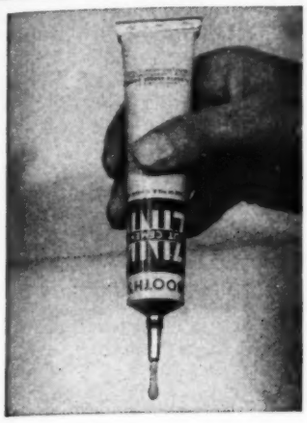
Dispatch Does Clerical Work

Clerical work has been entirely eliminated from the composing room. Our operation is devoted wholly to production. The dispatch room takes care of all the paper work connected with the ad room. This department accepts ad copy, fills out insertion date orders, engraving orders, assembles missing cuts, sigs and mats, accepts store-proof corrections and cancellations, and in every way acts as a middleman between the advertiser and the composing room. The dispatch room places all ads and furnishes a set of page layouts showing the positions of ads to both the news room and the composing room. The news department dummies the news stores on these layouts and then sends them to the composing room. In making up the paper we simply follow the two sets of layouts, placing the ads according to the dispatch room layouts and spotting the stories as shown on the news room dummies.

Cost Control Foundation

The foundation of the method we use in our system lies in maintaining a written record of the time consumed in the preparation, composition, and assembling of news and display ad copy together with job work, in its course, through the composing room from initial copy until the completed news stories and advertisements are locked in the forms. This is so devised that the recording of the time does not retard production of the individual.

To be of value, the system must be one that is practical of operation and reflects for the executive a continual picture of his department that can be easily under-



Use
ONLY THE BEST!

Use
BOOTH ZINK CUT CEMENT!

Years of constant use have proved the superiority of Booth Zink Cut Cement in Composing and Stereotype Departments.

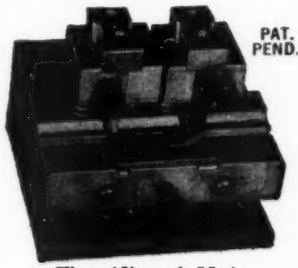
Only—
$1.00 per tube—$7.50 per dozen
F. O. B. Cleveland, Ohio

E. A. BOOTH RUBBER CO.
2855 Scarboro Road
Cleveland Heights 18, Ohio
Phone: FAirmount 1-2384

Circle 22 on Reader Service Card

LINOTYPE-INTERTYPE MATS—NOW COST 32¢ & UP

Can you still afford to throw them away because of bad alignment?



The *Align-A-Mat*

This simple device will double and triple the life of your working fonts. It will restore to factory standard hundreds of mats ready to be discarded. When sorting up fonts, old mats corrected on the Align-A-Mat will align perfectly with new ones. Distributor stops due to the lugs worn short will also be eliminated. Price $145.

EVERY MAT SAVED IS 32¢ SAVED

Now in use in hundreds of leading plants here, in Canada and abroad.

Please write for literature.

FISK, 130 W. 46th St., N. Y. 36, N. Y.

Circle 62 on Reader Service Card

WHAT'S NEW in LETTERING?

364 different lettering styles now available for Filmotype photo lettering machines. It means Filmotype provides even greater versatility of selection . . . supplies you with lettering ideas that can *make* any printed piece. You'll find the Filmotype Selection Guide an invaluable aid for every layout!

MAIL THIS COUPON
and also learn about the "Pays-for-Itself" Plan. Now anyone can own a Filmotype Machine.

FILMOTYPE
7500 McCormick Blvd., Skokie, Ill.
Yes, send me the FREE Lettering Styles Guide and other information about Filmotype.

Name_____
Firm_____
Address_____
City_____ Zone____ State_____

Circle 61 on Reader Service Card

Gorham Installs Offset—Howard W. Gorham president of the Gorham Press has announced the installation of a Miehle 36 offset press. Shown in the picture taken at the Gorham Press plant, South Norwalk, Conn., are, left to right: Howard W. Gorham, the 36 Offset, D. L. Shufelt, John Szarka and Bill Hamett, Miehle representative.

stood. When a man in charge of a department is not sold on the value of such a system, it would be folly for management to insist upon its installation—under such conditions a system is of no avail.

But it is ideal when we can have both. I mean a practical system and an executive who believes in it, believes in himself, and believes in management.

Three Kinds of Copy

Our composing room handles three kinds of copy material—news, advertising and job work. The job work represents forms incidental to the newspaper operations as well as commercial work for our rotogravure plant, radio and television departments.

News composition is broken down into the following classifications: Corona 5 pt. on 5 pt. slug and Corona 8 pt. on 8½ pt. slug, as body types, head letter machines, and Ludlow news head composition. News corrections consist of machine corrections and Ludlow head corrections. Other operations necessary to handling the news production are proofreading, copy-cutting, assembling, make-up and break-up.

If the cost system is to be of any value, employees must be trained to distribute their time conscientiously. For that reason our foremen check the time distribution on every employee's daily time ticket at the end of each shift, and with great persistence check up on all notations that appear to be erroneous. Let me emphasize that it takes time to make over 250 men realize the importance of keeping the daily time tickets correctly.

A system of 6-min. units is used, 10 units to the hour. This simplifies totals as a decimal point placed before the digit reduces the units to hours. For instance, if a man works 45 units on initial composition, insert the decimal point, 4.5, the result is 4 5/10 hrs., or 4 hrs. 30 min.

Each employee of the composing room secures a daily time ticket before commencing work. He fills this out as his work progresses. At the top of the card are listed the symbols which serve to identify or classify the various production operations.

The daily time tickets go direct to the auditing department. All classifications of work are recorded and the time is computed for payroll purposes. The daily figures are transferred to a weekly record, then to a 52 week accumulative book for comparative purposes. We work under a 13 period calendar which permits a perfect comparison by the day, week, month and year. Ten years are recorded in one book.

LABELING EQUIPMENT • FEEDERS
INSERT (Postcards, Advertising Literature, etc.)
FLAT WRAP
IMPRINT WRAPPER SORT BY TOWN
Solve your MAGAZINE MAILING PROBLEMS
with MAGNACRAFT EQUIPMENT!
to your specifications . . . to your special needs
MAGNACRAFT produces a comprehensive, time-tested group of machines and components designed to solve your particular problems. Tell us your specific mailing requirements . . . and you can confidently expect us to come up with the right answer. No obligation.
INSERT and LABEL
LABEL
FOLD WRAP
INSERT FLATWRAP IMPRINT SORT BY TOWN
FOLDWRAP FLATWRAP IMPRINT WRAPPER INSERT • LABEL AUTOMATICALLY SORT BY TOWN
Magnacraft MANUFACTURING CO.
7739 S. Kedzie Ave.
Chicago 29, Ill.
Write for DETAILS
FOLD WRAP LABEL
INSERT IMPRINT LABEL
WRAPPING MACHINES • MAILING MACHINES
For More Information Circle 109 on Reader Service Card

Makers of Fine Offset Plates
FULL COLOR • BLACK & WHITE
PIONEERS IN DRY RELIEF OFFSET PLATES
Our thirty years' experience in color and black and white work assures you of printing plates worthy of award. Skilled craftsmen excelling in the preparation of advertising art, commercial photography, offset press plates (all types), dry relief offset plates, photoengraved and rotogravure plates combine to afford you a most complete service.
Graphic Arts Corporation of Ohio
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A production cost analysis and engineering service for executives of Graphic Arts plants planning to build, expand or modernize equipment, layout, or manufacturing methods is offered by American Type Founders Co., Inc.

Two types of engineering service are being made available, according to D. G. Manley, general sales manager: (1) Layout service, and (2) Production and cost analysis.

ATF's engineering service is offered at a flat rate per day, plus travel and living expenses. By the terms of an engineering service contract, signed by ATF and the customer, provision is made for credits toward the engineering service in the event of equipment orders. The service is available to all Graphic Arts plants whether or not they purchase new equipment.

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Electrotypers Meet Offers Production, Research Topics

Latest production developments and industry research will be among many program topics of interest to duplicate letterpress platemakers at the 60th Annual Convention of Intl. Assoc. of Electrotypers & Stereotypers to be held at Hotel Americana, Miami Beach, Fla., Oct. 21-24.

Reports of research studies in letterpress, electrotyping, stereotyping, plastic and rubber plate manufacture will be made by persons prominent in the direction of research operations for such firms as: Sta-Hi Corporation; Vandercook & Sons, Inc.; Minnesota Mining & Mfg. Co.; Magplate Div., Brooks & Perkins, Inc.; Printing Plates Research, and others. Suppliers to the industry will also report on latest product and equipment developments.

Further details may be obtained by writing: Floyd C. Larson, executive secretary, Intl. Assoc. of Electrotypers & Stereotypers, 1058 Leader Bldg., Cleveland 14.

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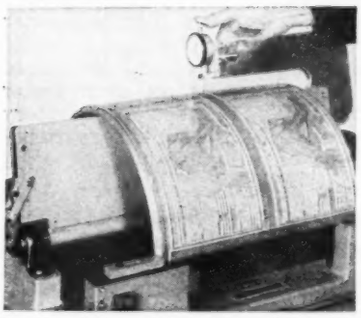

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SPPA Plans Convention

Featuring the largest trade exhibit in its history, the 1957 Screen Process Printing Assoc. Convention and Show will take place at the Sheraton-Cadillac Hotel, Detroit, Mich., Oct. 26 to 28. More than 3000 members of the screen process printing industry, including printers, suppliers and manufacturers, are expected to attend the convention.

The trade exhibit has been sold out since July and is said to be the most complete and up to date show yet featured at the SPPA meeting. In place of the forums of past years, the special industry committees of the association will hold informal meetings.

Econo Builds Warehouse

Econo Products, Inc. has announced the opening of a warehouse in Atlanta, Ga. The general area to be served includes Texas, Louisiana, Mississippi, Alabama, Georgia, Florida, North and South Carolina, Virginia, Tennessee, Arkansas and Oklahoma. The warehouse, which has facilities for frigid storage of plate molding compounds, marks the fifth in a series of expansions by Econo.

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Tinting Information

(Continued from Page 51)

tension most. Statistically, the data show that there are nine chances out of ten that a correlation exists between tinting and the lowering of surface tension produced by paper. We'd have more confidence, of course, if we had had more samples to work with.

Modification of Bitter Test

The four cases of non-correlation shown in Table I bothered us. We felt sure that more factors could be tied down. So, we changed Bitter's method so that the effect of fountain solution acidity could be checked. To do this, we used a phosphoric acid solution with a pH value of 3.6 instead of the distilled water. The results are shown in Table III.

Table III shows that the fountain solution acid can increase or suppress the surface active properties of coated paper. The greatest effect occurs with the first two immersions (10 sec. and 20 sec.). These first two immersions are considered to be the most important since correlation with them is better than with later immersions.

The fountain solution acid increased the surface activity of the paper in cases 3 and 4 and reduced it in cases 7 and 8. We also retested papers 1, 2, 5 and 6 with the acid solution. These papers which had shown good correlation with Bitter's test using distilled water gave practically the same results using the acid solution. So, use of the acid gave us an even better correlation between laboratory tests at LTF and press experience for these tinting cases.

Conclusions

These results indicate that tinting troubles might be greatly reduced if papermakers used materials whose surface activity can be depressed by the acid fountain solution. The work also led us to the belief that the surface active agents in coated paper are more or less concentrated on the surface of the sheet. We believe that when the coating is setting and drying during the coating process, the moisture that flows to the surface of the sheet carries the surface active agents with it and allows them to concentrate on the surface.

To illustrate, we have found that when we scrape 0.12 grams of coating from a sheet, the size of the area is important. Coating scraped from a large area will lower surface tension more than the same amount of coating scraped from a smaller area. This may explain why previous surface tension measurements using scraped coating

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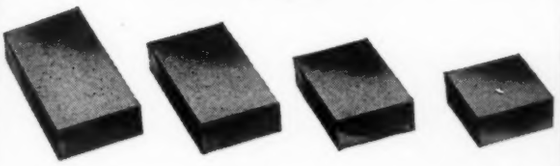

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from small areas did not correlate with press experience.

This test for tinting has considerable promise. We believe that it can be used to predict whether trouble can be expected in printing. At this stage, however, much more press experience is needed to determine how valid predictions based on the tests will be. Unfortunately, the test requires lab equipment for the surface tension measurements. It is thus not suitable for use in the average litho plant.

Our work on tinting is far from complete. During the past year, we repeated a number of experiments that we first tried about two years ago. In these tests, gradually increasing amounts of surface active agents were added to the fountain of an ofset press. Four strong agents of three types (anionic, cationic, and nonionic) were used with both plain water and fountain solution.

Other Factors Involved

As with previous experiments, we were not able to produce tinting. This fact would seem to disagree with our theory that surface active agents are a cause of tinting. However, fairly good correlation has been established between tinting and the ability of paper coatings to lower surface tension. So, it is very likely that other important but not well known factors are involved. These must be accounted for before we can produce tinting at will on the press.

We have recently begun a series of experiments by which we hope to resolve the apparent conflicts. Once tinting is completely understood and we are able to produce it at will on the press then ways to prevent or cure it should become evident.

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Makeready Survey

(Continued from Page 41)

been turning out what they themselves would call top quality work in as long as 33 years."

Commenting on the different kinds of makeready techniques, Kane said: "One printer cut his overlay under a magnifying glass; another tore the tissues by hand to make his overlay. Even the methods of stabbing and register are different in each case. Almost every printer told us he wouldn't normally take this much trouble on a job."

He was asked if there was any correlation from job to job on what the printer was trying to achieve. The 3M executive replied: "They all relieved the highlights and built up the solids, but none of them made any effort to correct in the middletones. This indicates to us that complete tonal correction is not possible with hand methods."

Kane was also asked for an opinion on the variation in the jobs as printed. He blamed it on ". . . human fallibility. Makeready isn't standardized. It is a craft handed down from one person to another. None of the pressmen printing the sample learned hand makeready from the same man, so they all do it differently. It is interesting to note that the man who took the most time didn't do the best job, and the man who took the least time did a very good job."

Another point mentioned by Kane was the length of time it took to makeready the identical job using the 3M brand makeready process. He claimed that in no case did it take over 25 min. for the 3M application and actually the average was below this time. This included, he added, any additional leveling or underlaying of the form.

Finally, he was asked if he thought 13 samples are sufficient upon which to base a conclusion. Kane said: "Generally speaking, I think it indicates a trend. I don't think we can say emphatically that our 13 samples will hit the averages right on the nose all across the nation. However, I think we obtained a good sample based on our experience in the field and what we have learned before."

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Presensitized Plates

(Continued from Page 50)

ways be to the back of the sheet. The cause of slur is too much back cylinder pressure. The excess pressure indents the blanket too much, and the blanket will have a tendency to slip on the paper.

From the above, it can be seen that the plate has nothing to do with slur. To overcome the slur, use as little back cylinder pressure as possible and still print properly. Don't ever try to squeeze an uneven blanket or a blanket with low spots because you will get slur. If you get slur with a new blanket, set with proper pressure and packing. Have the cylinder checked for trueness. Remember that the pressure between the blanket and the paper is regulated by the packing. It takes a certain amount of pressure to transfer the ink from blanket to paper. If we have less than the required pressure, we will not get a good impression on the paper. Too much will give us slur. The pressure on the bearers should be checked every so often. Follow the manufacturer's recommendations for this check. Bear in mind that if we pack the blanket too much so that we do not have the proper bearer pressure, the blanket will lift the plate cylinder so that the bearers will be out of contact when we print. In that case, we will have slur again.

While these seven are not altogether controlled by the offset

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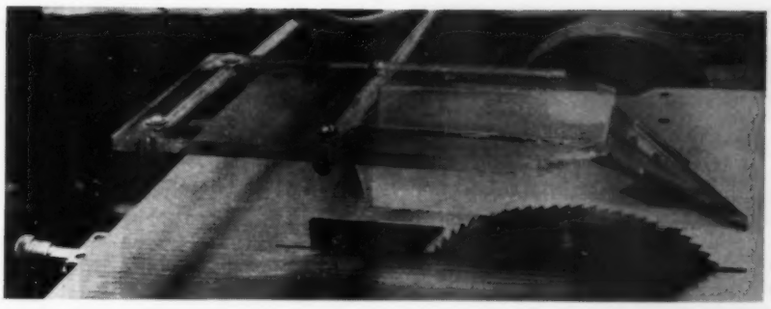
printing plates, it has been proved that the presensitized plates will help obtain better and more homogeneous printing results than with deep etch, dry offset or albumin surface plates and as good as with most bi- and tri-metallic plates. As has been stated already industry has accepted presensitized plates. Where used and processed as recommended they are giving a good account of themselves. Besides, most offset printers who use them maintain they are cheaper than albumin surface plates. We have not seen any figures lately but believe the above to be the case. Try them, but use them only as the manufacturers recommend. You will get better printing with less headache.

(*Series Concluded*)

Splitter Improves Safety On Stereotype Dept. Saws

Safety in saw operation has been greatly improved in the stereotype department of the Indianapolis (Ind.) *Star-News*. This has been accomplished by installing a plastic Brett-Guard on the work table of the stereo saw, and by developing what might be called a chip splitter or deflector. The latter device was developed by John E. Innis, general foreman.



As will be seen in the illustration, the chip splitter safety device consists of an adjustably mounted steel plate behind the carbide tipped saw blade itself. The splitter prevents chips carried in the interstices between the saw teeth from binding in the kerf (slot cut in the work by the saw). This eliminates possibility of the work (stereo base) riding up on the back of the saw which would result in a kick-back. The released chips, of course, are thrown upwardly against the transparent plastic TenSee Brett-Guard which covers the revolving saw blade.

In developing the chip splitter, Innis designed it so that the splitter rail could be adjusted the proper distance from different diameter saw blades. To accommodate the 1/16 in. thick splitter rail, the saw slot in the work table was milled out sufficiently to not only accommodate the 4 in. rail length but also movement of the rail to and from the saw teeth sufficiently to accommodate different diameter saw blades. The splitter blade itself is 4 in. long, by 2 in. high by 1/16 in. thick.

Next the splitter rail was mounted on a ½ in. diam. steel rod 11 in. long. The back end of the rod is fitted with a knurled knob and lock screw. The back end of the rod is mounted in a metal block ¾ in. high by 1¼ in. front to back by 2¼ in. wide. This block, as shown in the picture, is screw mounted to the rear edge of the saw's work table.

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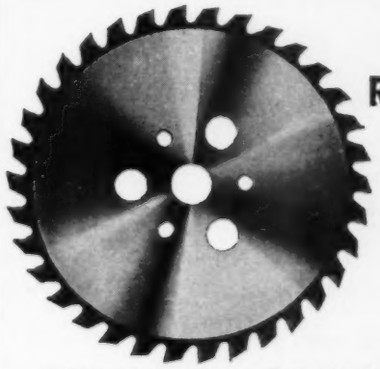

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Need for Research

Continued from Page 40)

tract research for governmental agencies.

The third type of research organization serving industry is the research foundation associated with a university. These foundations operate similarly to the independent research institutes, conducting research on a cost basis. Some have separate management and employ full-time permanent staffs. Others are responsible to the management of the university and use faculty members and graduate students either in part or exclusively for the execution of industrial projects. A few have their own laboratories, although the majority use customary university facilities.

Contract Research Defined

Contract research, then, is the mechanism by which the requirements in men and equipment for modern team research are fulfilled for a large segment of industry. It is of especial value in exploratory project investigations. Contract research does not replace or substitute company research facilities but supplements the research conducted in company owned laboratories in providing industrial progress. It also provides additional facilities, special facilities, or technical competence otherwise not available. Peak loads in the research programs of companies can be relieved by contracting some of the work. Instead of increasing their capital investment by installing or expanding their own research facilities, many companies are finding it more economical to use contract research agencies. This policy makes possible more research for fewer dollars. The growth of contract research, its evolution and development, and its extension to more and more industries is the most significant trend in respect to research facilities in America today.

Trade Association Laboratory

To round out the picture of modern research facilities, we should mention trade association laboratories. There are some 2000 trade associations of national or regional scope in the United States and approximately 10,000 of state and local importance. At least 30 of these associations maintain their own laboratories. In these laboratories, the problems of general interest to the industries concerned are investigated. Trade association research is designed to promote an industry as a whole, rather than individual companies, and thus to place the industry in a better position among competitive industries.

The same problems of capitalization and maintenance of facilities apply to trade associations as to companies. For this reason, most associations use contract research rather than building and staffing their own laboratories. As new associations are formed for the purpose of research—frequently called research associations—or as older trade associations take up research as one of their functions, they usually look to contract research organizations for their laboratory work. This trend, as opposed to the older practice of setting up trade association laboratories, is enabling more rapid progress in the solution of industry-wide problems, and thus is accelerating industrial progress generally.

From these considerations it can be seen that each industry and each company has need for a wide variety of management and technical services. These needs for technical services may encompass research and development, control problems, marketing, scheduling, inspection, testing, production, packaging, trouble-shooting, and a host of problems in related areas of science and technology.

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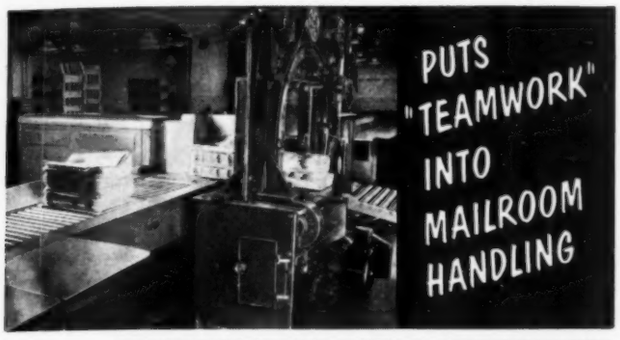

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vides income and profit to those involved but also challenges management to reduce packaging costs. All manufacturers of products requiring packaging are closely scrutinizing these costs and doing everything possible to reduce them. The smallest savings per item in packing costs can bulk large simply because of the tremendous numbers of items being processed. To meet competition, a continuing search for new materials, methods, and equipment must be supported. Upon the results of these studies will depend the increase of return on dollar investment, the maintenance and increase of business volume, and the minimization of your companies' dependence on scarce raw materials, or those likely to become critical in supply. This is not an easy search. Your competitors are searching too. The answer is a continuous research program at an effective rate of effort. Research cannot be turned off and on like a faucet. Inference must be replaced with measured observance.

Supplier Research

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It is recommended that every company using packaging operations utilize the research facilities and services of suppliers to the fullest extent, but not to limit research to this source.

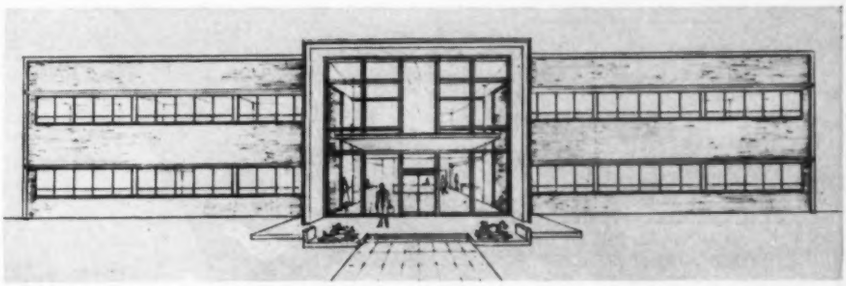
Companies having research and development needs in the packaging field are urged to seriously consider the utilization of contract research facilities.

Pacific Conference

(Continued from Page 49)

three other ANPA colors and white, and made a simple intermix system for the benefit of papers wishing to mix their own inks. Our system was achieved by just mixing two inks together. Only in the browns did we have to add the third ink. For the least amount of inks mixed together, the simpler it is on the part of the pressman the easier it is to match your copy.

"On colors which could not be mixed by these six colors and white, we selected the most popular colors used by newspapers along with some of the most popular colors used na-



A New Building equipped with air conditioning, cafeteria and railroad siding is to be erected by Trenton (N. J.) Times Newspapers. The modern two-story brick and glass building will provide 75,000 sq. ft. of floor area. New equipment to be installed in the new plant (architect's sketch shown above) includes eight Scott press units with auxiliary equipment for producing ROP color.

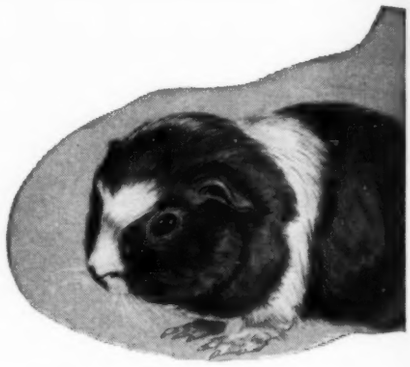
Guinea Pigs and Dry Mats...

• Guinea Pigs are symbolical of experiments. A stereotyper could experiment with half a dozen brands of mats and possibly get a dozen varying results. But why make a Guinea Pig of your operations? Have Beveridge Improved Mats take the gamble out of mat buying. Standardize on Beveridge and get the best results possible for your work. That goes for either syndicate or newspaper work. One order will convince you.

New Products Division

THE BEVERIDGE PAPER CO.

Indianapolis 4, Indiana



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Authentic Values!

Here, your hard-earned dollars bring top-notch quality, fair and friendly treatment!

Current Offerings:

MIEHLE Verticals V-45 & V-50
MIEHLE 41 single and two color units, current models, post-war
MIEHLE Two Color Presses, models 41TC, OTC, 3/OTC, 6/OTC
COTTRELL Two Color 36x48 post-war (2)
LAWSON 46" hydraulic cutter
SEYBOLD 4-VA tumbler trimmers (2)
SEYBOLD 50" Precision cutter
SEYBOLD 56" 10Z cutters (3)
DIAMOND 34½" hand clamp
VANDERCOOK Current model 325G
ATF Big Chief, post-war
KELLY presses 17x22, 22x28, 24x35

Standard brands of new machinery and equipment for pressroom, bindery and composing room usage.

TYPE & PRESS
of Illinois Inc.
3312 N. Ravenswood Ave., Chicago 13
A trustworthy name in the trade

Circle 177 on Reader Service Card

tionally. These national colors were taken for color trends. A color trend report shows the change in color preference in the United States in the last six months. The most popular of these colors were added to the guide along with gold and silver.

Tear-Off Color Swatches

"In looking over this catalog you will note the ANPA standard colors in one column, two columns of intermix colors, and one column of standard ROP colors. In turning to the back section of this catalog, you will note 61 color swatches, each swatch representing a color shown in the first part of the catalog. Each swatch contains approximately 20 tear-off swatches which can be used by the advertiser, the advertising departments, stores, pressrooms, and others concerned."

Engraving and Advertising

The chairman representing the engravers at this meeting was Steve Lea, Sterling Engraving Co., Seattle, Wash. Representing the advertising departments of the newspapers was Harry Davidson, San Francisco (Calif.) *Call-Bulletin.*

The speakers and their topics were: *New Alloys for Engravers,* Fred Dirkes, Rolled Plate Metal Co.; *Progress of Fast Etch,* Richard E. Lewis, manager ANPA Mechanical Dept.; *Color Klischograph,* by a representative of Consolidated Intl. Equipment & Supply Co.; the advertising educational program as introduced by the ANPA was explained by Glen Hutchinson, Los Angeles *Times; Advertising With a Pull,* was discussed by Howard King, Intertype Company; *Coordination Versus Frustration,* was the topic discussed by Monty Solkover, Pacific National Adv. Agency, Seattle, Wash., representing the advertising agencies; Harry McLain, vice president, Portland (Ore.) *Journal,* and Dick Jones, National advertising director, Portland (Ore.) *Oregonian,* representing national advertisers.

Mailroom Clinic

W. E. Gibbons, Portland (Ore.) *Journal,* was moderator of the mailers' meeting with George Henderson, Portland (Ore.) *Oregonian,* and Ed Egan, Portland (Ore.) *Journal,* was Chairman. The speaker and topics were: *Automation in the Mailroom,* by T. M. Birch, Cutler-Hammer, Inc., and *Tymaster Twine and Bundling Machine,* United Shoe Machinery Co. There was general discussion with many questions being asked following the speakers.

Machinists

The machinists held their usual good meeting with Eddie Maggi, Phillips & Van Orden, San Francisco, Calif., chairman, and Jim McVety, Vancouver (B. C.) *Sun,* as co-chairman. The speakers and topics were: *What's New With Intertype,* by Paul Brumbaugh, Intertype Company; *What's New With*

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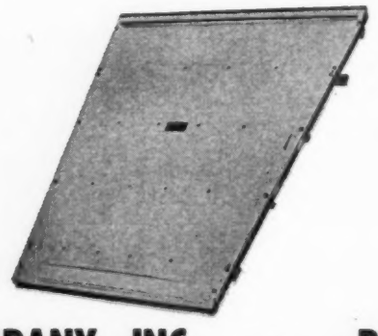
LIGHTWEIGHT LINOTYPE MAGAZINES

IMMEDIATE DELIVERY FROM YOUR NEARBY MONTCO DEALER OR DIRECT FROM



IMPROVED FEATURES
- ALUMINUM TOP PLATE
- BRASS BOTTOM PLATE
- STEEL FRAME • EXTRA DOWELS
- FULL LENGTH—35#
- LOWER SPLIT—19#

FULL LENGTH—$176.00
LOWER SPLIT—$154.00

LIGHTWEIGHT WITH SERVICEABILITY

MONTGOMERY COMPANY, INC. • BOX 309, TOWANDA, PA.

For More Information Circle 125 on Reader Service Card

Linotype, by Harold Dawson, Mergenthaler Linotype Co.; *Type Metal Problems,* by Leslie J. Larrieu, Morris P. Kirk & Son; *Important Steps in Applying Studs and Bushings,* by Clark Congleton, Seattle (Wash.) *Times.* These were followed by questions on machine problems, answered by the panel which included Clark Congleton, Evan Armitage, Olympia (Wash.) *Daily Olympian,* and Quido Herman, western manager, Star Parts, Inc., Los Angeles.

A paper was read by Coleman Wright, the Sun Company, San Bernardino, Calif., on *Progress of Teletypesetter.* A paper written by a member of the Cincinnati (O.) *Enquirer* on *Mat-Pak,* was read by Quido Herman. This last paper caused quite a lot of discussion as to whether the saving in the stereotype department would be offset by the added expense in the composing room.

Stereo Plates

(Continued from Page 54)

of mounting the limit switch at the end of the pump control handle. This switch controls the solenoid valve shown in Fig. 3.

The water and temperature controls are operating satisfactorily. The water supply is piped to the machines with oversize lines and normal water pressure is 40 lbs. p.s.i. Due to the wide fluctuation in water temperature between winter and summer, controls of this type are necessary to obtain and maintain the quality of the plate.

Shaver Arch Control

A change in operating methods can often solve a problem and furnish a control for quality also. An example is the manner in which we control the temperature of our shaver arches to overcome the temperature variation between winter and summer which formerly caused a plate variation of 0.005 in. The water supply lines to the shaving arches were separated from the cooling stand line and a tempered water supply was furnished for the arches. The system (Fig. 5) is easy to install and requires little maintenance.

The operating heart of the system is a Sarco Blending Valve. Hot water is fed in one side and cold water is supplied to the other inlet. The temperature adjusting valve on the bottom of the Blender is set to the desired temperature which, in our operation, is 80 deg. F. The tempered water is then piped to the individual shaver arches. By-passes are provided in the event we have a failure in the system. Plate variations due to deflection of the arches caused by water temperature changes are now less than 0.001 in.

For the convenience of the operators and to check the operation of the system a temperature gauge (Fig. 6) is installed on the top of each shaver arch. The red and green bullseyes are control indicators. The green light indicates the main water supply to the cooling stand is on. The red light indicates the cooling stand is clear of plates and insures no starter plates have been left on the water stand when the machine is shut off.

Color Plate Work

The evaluation of methods used in the department included the approach and methods we were using for color work. Until two years ago, all of our three and four color work had been cast from hot molded mats. Since we use the three color process for our own editorial feature color material, due to the flexibility inherent in its use and because we were handling the original three color plates in the department, several trials were made using cold mold mats. All indications pointed to further trial and experimentation with this method.

Today we handle all three color editorial material on low shrinkage mats, cold molded in our own plant. Register problems do not exist to the degree they did with hot molded mats. Full control of the register of plates and the handling of mats precludes the possibility of error.

We register on and mold from a magnesium molding slab with barriers scribed for Autoplate trimming. This molding slab is backed up with another magnesium slab to bring the material to type high. Our normal molding combination is used with a mat conditioned for ¼ in. shrinkage.

Our color work is handled as routine work. We use standardized production methods and apply the same quality controls to this work as we do to our regular black and white

SPEED PRODUCTION WITH RICHARDS'

SAWS • ROUTERS • MORTISERS

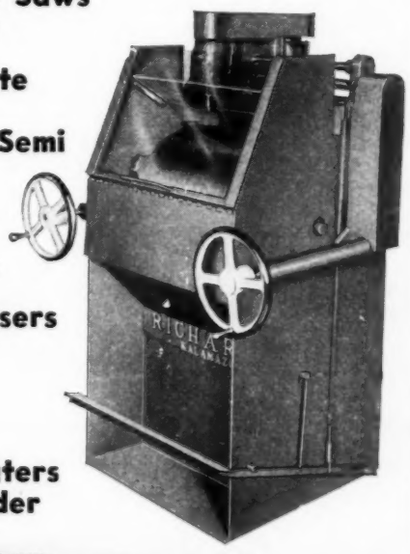
Stereotype Saws Three Sizes

Curved Plate Routers Tubular or Semi

Flat Plate Routers Three Sizes

Plate Mortisers Bench or Pedestal Models

Special Routers Built To Order



J. A. RICHARDS COMPANY

903 N. PITCHER STREET • KALAMAZOO, MICHIGAN

For More Information Circle 150 on Reader Service Card

The FINEST Rotogravure calls for the FINEST cylinders

That's why America's leading Plants "STANDARDize It"

Every Standard-built cylinder is manufactured to the highest precision from quality materials. They're machined, assembled, balanced, copper plated, ground and polished COMPLETELY, under our own roof!

YEARS OF EXPERIENCE

Re-Copper plating, grinding and polishing Gravure Cylinders

STANDARD PROCESS CORPORATION

Manufacturing Gravure Equipment and Supplies

2704 WEST ROSCOE STREET

CHICAGO 18, ILLINOIS

For More Information Circle 196 on Reader Service Card

WEB BREAKS?

THE WEB BREAK DETECTOR SYSTEM DESIGNED FOR HIGH SPEED PRESSES

COMPLETE PRESS PROTECTION AGAINST WEB BREAKS

Specify the **COOKSEY SYSTEM**

for information write to:

KORTHE ENGINEERING CO.

9353 Summit Ave. Schiller Park, Illinois

Sales Agents { The Goss Printing Press Co., Chicago
R. Hoe & Co., New York
Wood Newspaper Machinery Co., New York

For More Information Circle 99 on Reader Service Card

Are you going to 11-ems or 9-columns? If so, now is the best time to change to

ALUMINUM STEREOTYPE CHASES

The Dural Aluminum Chase is the most popular and finest Stereotype Chase on the market! There are now more than 100 exclusively aluminum chase installations in the United States and Canada. If you will trade in all of your steel chases, we will give you a liberal trade-in allowance on the purchase of an equal number of Durals. Wire, phone or write today to

BEARD NEWSPRINT & WAREHOUSE CO., INC.

8761 FULTON ST. DETROIT 9, MICH.

For More Information Circle 19 on Reader Service Card

reproduction. We have no specialists for color and do not feel any are needed. Perhaps because we run color as straight ROP and not as supplements, on tension plate lockup presses that do not allow for carding or cocking of the plates to make them register, we feel the responsibility for exact register is properly placed in the stereotype department.

The one major factor in our operation is personnel. I have touched upon it very lightly. We find a successful operation is dependent upon personnel consulted on changes, whose ideas are sought, and who have a feeling of being part of the operation.

To a degree we must depend upon the ability and skill of the individual, the simplification of various operations in the stereotype department and the use of quality and production controls. The evaluation and adoption, where practical, of new methods and new materials can provide them means for obtaining a better product while increasing departmental efficiency and production.

QUICKEST, LOWEST COST BEST WAY TO EFFICIENT PLANT LAYOUT

TRI-DIMENSIONAL SCALE MODELS

Cut Planning Time and Cost By 70%

Nothing equals TRI-DIMENSIONAL MODELS of buildings, desks, machines, equipment and personnel for rapid, low cost, plant layouts. With scale MODELS, blueprints come alive. You make changes easily . . . spot errors instantly . . . save redrawing blueprints, recutting templates. See everything at a glance. We can help you save time and money. Write today!

MODEL PLANNING CO.

P. O. Box 44, Hillside Manor
New Hyde Park
Long Island, N. Y.

Circle 122 on Reader Service Card

Equipment Problem

(Continued from Page 54)

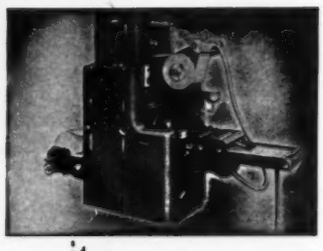
the suburbs and advertisers were discovering that the weekly newspaper in a high income suburb constituted a fine medium for certain types of merchandise, particularly high priced items featured by suburban branches of large metropolitan department stores. Some of the small weekly newpapers were combining this advantage with faithful and more appealing halftone reproduction obtained by offset printing and between the two, were encroaching perceptibly on an advertising market that had previously constituted the private demesne of the metropolitan daily. Frequently, these newspapers were set by IBM or by Commercial Controls Justowriter machines. The old time newspaper men were still harping on the shortcomings of the appearance of composition produced by this method, but the subscribing and buying public most favorably impressed with the superiority of halftone reproduction was, for the most part, unaware that a difference existed. In the few cases where there was such awareness, there appeared to be little choice between the two.

Type Set One Place —Printed In Another

In 1957, the practicability of sending pasteup copy ready for camera and, subsequently, press, was established to the extent that one weekly newspaper publisher in New York State was sending pasteup copy over 100 miles away to a printer in New Jersey equipped with camera and platemaking facilities and a web offset press and was obtaining 6000 copies of a finished newspaper five hours after the delivery of the

Speed Flex **ROTARY PRESSES SPEED PROFITS!**

for new, faster methods of printing, investigate *Speed Flex*



ORVILLE DUTRO & SON, INC.
117 West 9th St., Los Angeles 15, Calif.

NAME

ADDRESS

CITY ZONE STATE

WRITE FOR INFORMATION!
Designed and sold exclusively by Orville Dutro & Son. Made by Western Gear, manufacturers of gears and special machinery for industry since 1888.

For More Information Circle 54 on Reader Service Card

CHAS. T. MAIN, INC.

Engineers Since 1893

ECONOMIC STUDIES, PROCESS STUDIES, DESIGN, SPECIFICATIONS
PROCUREMENT AND CONSTRUCTION SUPERVISION
FOR

NEWSPAPER AND PRINTING PLANTS

80 Federal St. Boston, Mass.
317 South Tryon St. Charlotte, N. C.

For More Information Circle 110 on Reader Service Card

CLASSIFIED Advertising

ALL CLASSIFICATIONS

$.75 per line 1 9/16" wide. Minimum ad 5 lines, 25 characters per line. Cash with order.

CLOSING DATE—15th of Month preceding Date of Issue

We will forward all mail addressed to Box Numbers. When answering Box Numbered ads, address as follows: Box Number . . . PRINTING EQUIPMENT Engineer. 1276 West 3rd Street, Cleveland 13, Ohio.

FOR SALE

TAG PATCHING MACHINES patches all size tags, forms or envelopes. Delivered set up ready to run. New Model $1485. Rebuilt $985. Makatag Corp. 2 Linden, Reading, Mass.

FOR SALE

Marresford Automatic Tipping Machine. Size "B" ¾ HP motor, 60 cycle, AC current, 220 volt, 3 phase, Serial #1082 7½ x 10½ maximum size. $1800.00 Reply Box 561, PRINTING EQUIPMENT Engineer

---

SAVE Line-up Time with PICAGRAPH Transparencies. 60x72 or 72x108 Picas, $3 up. Write for particulars. Theo. Moller, 655 Riverside Dr., N. Y. City

WANTED

Used 24 inch hand operated paper cutter. P. O. Box 146, Holly, Michigan

---

SALESMAN WANTED

Man with complete knowledge of linecasting machines, machinist experience preferred but not essential; for traveling position. Write stating particulars about yourself. Box 562, Printing Equipment Engineer.

FREE BOOKLET "PRACTICAL COPY-FITTING" gives much helpful information about setting type to fit layout space. Sent without charge, write Arthur B. Lee, 25 W. 45th St., New York 36, N. Y.

PRODUCTION CONTROL ASSISTANT

OPENING IN A LARGE NEW ENGLAND LITHOGRAPHING HOUSE AS PRODUCTION CONTROL ASSISTANT. WITH RAPID ADVANCEMENT POTENTIAL. THIS IS A CHALLENGING OPPORTUNITY FOR A YOUNG MAN WITH ONE OR TWO YEARS EXPERIENCE IN THE GRAPHIC ARTS, PREFERABLY LITHOGRAPHY, AND AN INDUSTRIAL ENGINEERING DEGREE. THIS IS IN A COLLEGE COMMUNITY IN THE COUNTRY WITH EASY COMMUTING TO LARGE URBAN CENTERS. PLEASE SUBMIT RESUME OF YOUR EDUCATION AND EXPERIENCE TO BOX NO. 555. ALL REPLIES WILL BE TREATED CONFIDENTIALLY.

PLAST-O-DAMP

MEASURED MOISTURE

Almost too good to believe!

Veteran lithographers shake their heads and say it won't work—then, because they're experimenters at heart, they try it—AND IT DOES!

Soft, specially compounded water form bases and disposable, lintless dampening covers which deliver a measured moisture film to match your measured ink film or lithographic work! Try them

4 FACTORIES

IDEAL ROLLER & MANUFACTURING CO.

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HUNTINGTON PARK, CALIF CHAMBLEE, GEORGIA

For More Information Circle 92 on Reader Service Card

Self Spraying

PRESS BUTTON AND SPRAY

$3 PER CAN

$30 PER DOZ.

STATIKIL

TRADE MARK REG. IN U. S. PAT. OFFICE

STOP STATIC ELECTRICITY

The Original The Only

STATIKIL

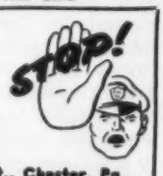
1220 W. 6th St. Cleveland 13 Ohio

For More Information Circle 53 on Reader Service Card

STOP HAIR LINES BEFORE & AFTER THEY START

Save time and prolong the use of fonts of mats with crushed sidewalls.

The **HARTCO SYSTEM** protects spacebands . . . keeps sidewalls perfect and permits type metal to fill in crushed sidewalls.



HARTCO MFG. COMPANY 224 Meade St., Chester, Pa.

For More Information Circle 83 on Reader Service Card

GET FULL PRODUCTION QUALITY PRINTING WITHOUT STOPS FOR UNNECESSARY WASHUPS

Doyle SHEET CLEANERS

PATENTED

Write for Free Bulletin

J. E. DOYLE CO. 1220 West 6th St., Cleveland 13, Ohio

For More Information Circle 52 on Reader Service Card

PRECISION

Flat-Ground TURTLE

Mirror-smooth, extra thick top, 24" x 28½", is heavily ribbed to maintain accuracy. Adjusts from 36½" to 39½" working height. 5" x 1½" double ball bearing swivel type composition casters. Heavy-duty, rugged construction assures years of trouble-free service.

NOLAN Corporation Dept. 7210 Rome, N. Y.

For More Information Circle 133 on Reader Service Card

QUICKSET INK CONDITIONER

TRIK®

for work-&-turn litho and letterpress . . . eliminates messy non-offset spray.

1 lb. can $2.20 Send for Price List

CENTRAL COMPOUNDING COMPANY

1723 N. Damen Ave. • Chicago 47, Illinois

Mfrs. of Glazcote, 20/20 Overprint Varnish, 33 & 0-33 Ink Conditioners

For More Information Circle 34 on Reader Service Card

WEB DRYING

LETTERPRESS • OFFSET

GRAVURE • FLEXOGRAPHIC

HIGH SPEED PRODUCTION

ECONOMICAL OPERATION

25 Years DRYER *Experience*

B. OFFEN & CO.

168 N. Michigan Ave. Chicago 1, Ill.

For More Information Circle 141 on Reader Service Card

American Beauty Cover Co. has moved into its new headquarters at 1401 North Carroll, Dallas, Tex. The two story brick building represents nearly double the space facilities of the former plant. Extensive remodeling has transformed the 38,000 sq. ft. area, including special lighting fixtures capable of proper light for production. A private parking area adjoins the building, and a separate loading dock enables quick handling of incoming and outgoing orders.

pasteups while the delivery truck waited for the return trip.

Perhaps the greatest triumph to date for cold type composition occurred on April 16 of this year when the Ayer Award for the nation's best tabloid went to the Middletown, (N.Y.) *Daily Record,* a publication less than one year old, produced by offset and set entirely by cold composition. The excellence of the halftones, superior to anything obtainable by orthodox newspaper methods was, no doubt, a factor. In the awarding of the prize, important also, however, was the fact that cold composition produced by Justowriter typewriter had proved acceptable not only to the reading public but to expert judges of advertising and typography. One more hurdle in the path of progress had been successfully negotiated by relatively new media.

Awarding of the Ayer trophy to a newspaper composed by Justowriter machine and produced by offset, constituted a notable climax to advanced thinking, backed by successfully putting theory into practice. Unless we misinterpret the portents, it indicates an entirely new era in the mechanical production of the newspaper. Advertising agencies, which have accepted Justowriter composition, cannot fail to be impressed with the beautiful halftone reproduction of some of the small offset produced newspapers.

Typewritten Justification At 1 Line Per Sec.

Recent developments in photographic justification give promise that before long typewriten copy may be justified at the rate of a line a second, or faster. A machine accomplishing this would take care of the justification of copy for 40 or 50 weeklies and would do it at a rate previously unheard of in the publishing business.

It does not require much imagination to visualize the weekly newspaper publisher of the future going into business with a half dozen typewriters to serve as the first step in his production program. The typewritten issue of the newspaper, after being carefully proof read, will be sent to a central printing point. This central newspaper printing plant will do the justification of the typewriten copy, the pasteup, the platemaking and the offset printing and will deliver the finished newspaper to the publisher.

Any such production cycle as the one we have described would indeed be revolutionary. Its impact on other phases of our daily lives might be tremendous. The newspaper, one of the most important factors in politics, could be started with a capital investment of a comparatively few thousand dollars.

(To Be Continued)

New 51st

Penrose Annual

•

The 1957 edition (51st) consists of over 200 pages with inserts (many in color) showing accomplishments in printing by letterpress, offset and gravure, including wood block, linoleum, die stamping and embossing. There are 18 general Graphic Arts articles and 23 technical articles. Hard bound in gold stamped dark green cloth.

$9.75 postpaid

(Remittance with order)

PRINTING EQUIPMENT Engineer

1276 W. 3rd St. Cleveland 13, O.

ADVERTISERS' INDEX
OCTOBER 1957

P. E. E. REPRESENTATIVES

PAUL B. HOLDER, Advertising and Promotion, 1276 West Third St., Cleveland 13, O. Phone PRospect 1-0088.

WILLIAM L. OSBORN, Eastern Advertising Representative, 2709 Grand Central Terminal, New York 17, N. Y. Phone MUrray Hill 6-5980.

MELBURN O. SIMMONS, Mid-West Advertising Representative, 333 North Michigan Ave., Chicago 11, Ill. Phone DEarborn 2-6467.

WM. A. AYRES, West Coast Representative, 233 Sansome St., San Francisco 4, Calif. Phone YUkon 6-2981.

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THE NEW....

Hammond G-100 Glider*

. . . with these

NEW

features

NEW!

ALL-PURPOSE SAW GUARD with side mounting for both slug and plate sawing eliminates guard changing. Also windows in the guard provide a view of the saw cut.

NEW!

COMPLETE CHIP AND WASTE DISPOSAL. Opening on the right allows handy discarding of waste material. Large chip chute and truck capture the waste.

NEW!

MICROMETER GAUGE hand wheel and finger fit the hand exactly. Large pica and point graduations read at a glance. Single action workholder clamp locks quickly and securely. These combine to provide fast setting and clamping to measure.

NEW!

EXTRA LONG BALL ROWS on the Gliding table provide smoother and more accurate sawing.

NEW!

THE NEW G-100 GLIDER is built to precision machine tool standards and is heavier throughout. These add further to the Glider's well-known qualities of accuracy and long life.

ALSO TWO NEW BENCH GLIDERS

Write for new TRIMOSAW Bulletin 958 No obligation

*Registered Trademark of Hammond Machinery Builders, Inc.

Hammond Machinery Builders INC.

1604 DOUGLAS AVE. KALAMAZOO, MICHIGAN

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Why

FOTOSETTER CUTS COMPOSITION COSTS

Fotosetter saves time by eliminating many operations. It can set right-reading composition directly on photographic paper—from 3 pt. through 54 pt.—in a wide variety of faces. Less than five minutes later the composition is ready for paste-up. That's a far quicker and simpler way to set type. Furthermore, instead of putting up with smudgy, ragged repros, you get clean, sharp, smearproof, uniform composition that plates and prints to perfection.

Fotosetter saves space by eliminating much bulky equipment used with conventional metal typesetting methods. Fotosetter needs only one-eighth as much space for storing magazines because one font of Fotomats sets up to 14 sizes of type. Bank, type cabinets, saws, spacing material cabinets, casters and furnaces are no longer needed. An ordinary file cabinet replaces present type storage space.

Fotosetter requires less capital. It saves up to 85% in the cost of matrices and magazines. Auxiliary equipment costs only a small fraction of what you would spend for the many pieces of equipment used with metal composition. Fotosetter eliminates the need for tying up money in a mountain of metal.

Investigate how much Fotosetter photographic typesetting machines and methods can save you. Ask your Intertype representative to tell you the whole Fotosetter story.

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A Division of Harris-Intertype Corporation

Chicago, San Francisco, Los Angeles, New Orleans, Boston
In Canada: Toronto Type Foundry Company Ltd., Toronto, Montreal, Winnipeg, Vancouver, Halifax

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